



715 West Colton Avenue
Redlands, CA 92374
Toll Free: (877) 793-6636
Phone: (909) 793-6636
admin@covington-engineering.com
www.covington-engineering.com



Owner's Manual For Vertical Sanders

464WBS - 466WBS - 760WBS - 761WBS - 764WBS
(Also applies to 220V, 50Hz International Models)

Packet Contents:

- **Safety Demands**
- **Instructions**
- **Schematic**

Important Safety Demands For Sanders

Covington Engineering designs machines with safety in mind. Please read our Safety Demands Sheet carefully and follow for your safety and the safety of others.

ELECTRICAL

Have your licensed electrician electrically ground your machines and equipment (against electrical shock) by complying with federal, state, and local laws. Locate electrical and in-line switch or switches so operator can immediately shut them off in an emergency.

DO NOT allow more than one person to operate a machine, unless you have a switch for each person, which is wired so that any one of the switches will stop the machine in an emergency.

Keep children, visitors, and pets away from electrical devices and machinery.

DO NOT work in wet environments where electricity is present.

DO NOT plug into electricity until the motor switch is off and the proper voltage is supplied.

DO NOT leave motors running when not in use.

DO NOT wear jewelry or rings around electricity.

Keep all electrical cords away from moisture, rain, and moving parts.

Periodically check all cords for worn or frayed spots and replace or repair to code if needed.

Thermally protected motors will stop if overloaded. When they cool, they will start automatically without warning. If the motor stops, shut the switch off for your protection.

USER SAFETY PRECAUTIONS

To avoid injury, protect yourself and others using the following guidelines. These are not exhaustive so please use discretion and take every safety precaution when operating machinery.

1. Wear tight clothing. Loose clothes can be drawn into machinery.
2. Wear closed-toe shoes.
3. Wear safety goggles to protect your eyes from flying particles.
4. Loose hair is very dangerous because it can easily get caught in moving parts. Use a net or cap that will secure your hair inside so it is not exposed to the machinery.
5. Keep your hands and fingers away from “danger spots” or “pinch points” where they might be injured.
6. Keep children, visitors, and pets away from machinery.
7. Use a respirator to protect yourself from particle inhalation.
8. Take off loose jewelry before using machines.
9. Be sure that all moving parts are shielded and all guards are in place before operating any equipment.

CHEMICAL



California Proposition 65 Warning -- For more information: www.P65Warnings.ca.gov

WARNING: Some of our products contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Very few people are allergic to lapidary and glass chemicals such as polishes, grits, abrasives, sawing solutions, etc. If you show signs of rash or allergies of any kind when using any of the products, determine which one it is and stop using it. Check with your doctor.

Keep all chemicals away from children and pets; never eat or drink these chemicals.

Keep all lapidary chemicals, grits, and glass sediment out of your sewer drains or they may clog.

DO NOT allow liquids to get on floors. You could slip and fall.

MECHANICAL

IMPORTANT: NEVER MODIFY COVINGTON MACHINES – This will void all warranties and can be very dangerous.

PINCH POINTS – Pinch points on machines can be varied and numerous. These include but are not limited to areas with blades, belts, wheels, pulleys, discs, arbors, bearings, shafts, and other moving parts. This list is not exhaustive so please use discretion and take every safety precaution when operating equipment or performing maintenance. Specific pinch points on Covington’s vertical sanders also include the area behind the belt, between the drums, as well as in front of the belt between the tool rest and the belt. Keep your fingers away from these areas and do not wear loose clothes or hanging/dangling items near this machine as they can get caught and cause severe injury.

Keep rags and foreign objects away from machines.

Be sure that all guards and/or covers are in place before running machines. Do not run your sander without the belt guard securely attached to your machine.

Instructions For Vertical Sanders

INTRODUCTION

Covington's Vertical Belt Sanders are designed for convenience and versatility. These multi-purpose machines are among our most popular sellers. Vertical sanders allow artists to create softer edges on their pieces by using the space above the rigid backing plate, or long flats by utilizing the backing plate behind the belt. Whether you're working glass or gemstones, Covington Sanders will take you through deburring, shaping, cleaning, sharpening, smoothing, and polishing your workpieces. These versatile units are an excellent choice for beginners and professionals alike.

DESCRIPTION

Covington sanders are constructed of a heavy cast aluminum upright and a base tank. Both bearings are shielded, double neoprene-sealed, and greased for the life of the bearing. Each sander comes equipped with a 220g silicon carbide sanding belt. *We recommend purchasing a belt kit (one of each grit + an extra 100g) with your sander in order to experiment with all of the grits.* All Covington sanders come equipped with a backing plate and a brass valve for water hook-up. Model numbers 464WBS and 466WBS accept 3" x 24" sand belts. Models 760WBS, 761WBS, and 764WBS accept our 3" x 41-1/2" sand belts. *We recommend purchasing a plumbing kit to make water hook-up easy.*



Image 1

SET UP

Safety: Before plugging in your unit, read the first section of this packet labeled *Important Safety Demands for Sanders.*

- Place your sander on a sturdy workbench or a Covington Sander Stand. If you are using a sander stand, you will need to secure your sander to the stand using the screws supplied with the purchase of the stand (see image 2 for proper installation of screws). The stand can be anchored to the floor using lag-bolts from your local hardware store (these are *not* provided with the purchase of the stand).
- If you are using your sander for wet applications (ie. grinding glass or gemstones) you will need to hook up your brass valve to a water supply. We also recommend replacing the plug on the front of your sander with a drain kit. This allows you to have a "fresh water in - dirty water away" system that keeps your unit clean and prevents cross-contamination issues. *Your sander does not come with plumbing supplies for water hook up or drainage.* If you purchased a plumbing kit, everything you need will be included in the plumbing kit box. You may also choose to hook up directly to a house water supply. The following installation instructions will only apply to the hook-up of the tubing to the sander and will not cover connection to your house water supply since that can vary widely.
- Your Covington Vertical Sander comes with a brass valve like the one pictured in image 3. This style of valve accepts 1/4" O.D. tubing. In order to make your valve water-tight, you will also need a brass insert (A) like the one sticking out of the end of the tubing. To connect the tube to your valve, you must remove the nut (B) and ferrule (C) from the valve (D), slide the nut onto the tube first, slide the ferrule onto the tube second, and slide the insert into the tube. Press the tubing into the valve, push the nut up to the threads, and tighten the nut

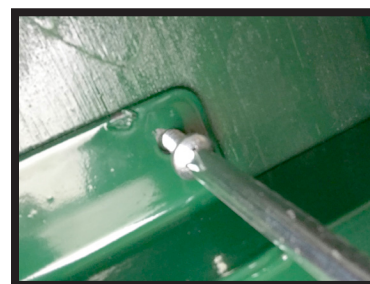


Image 2

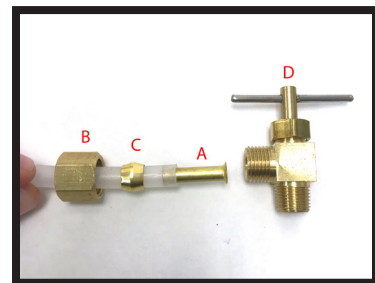


Image 3

back onto the valve using a 1/2" wrench. The insert allows the ferrule to collapse onto the insert which creates a seal and prevents leaking. If you purchased a plumbing kit, the tubing and insert are both included. A small amount of water is sufficient to keep the belt wet. If water is splashing all over the place, it is likely that you are using too much water. There is a spray nozzle and a small piece of felt on the underside of the hood. The spray nozzle sprays the water across the surface of the belt. The felt attaches to the spray nozzle and helps distribute the water evenly across the face of the belt. The felt does not need to fully lay against the belt to be effective. If you find that the belt wants to grab the felt, you can press the felt up into the hood (while the sander is turned OFF). The felt will still distribute the water evenly while preventing the belt from grabbing it.

- If you purchased a pump or a plumbing kit, installation of the pump is easy. You will need a bucket to place the pump into for your fresh water supply. The other end of the 1/4" tubing simply presses into place in the quick connect fitting attached to the pump (see image 4). Should you need to attach the foot to your pump, gently remove the front plate on your pump and slide the foot plate into place (image 5). Replace the front plate on the front of your pump. This prevents large pieces of debris from being sucked into the pump and clogging it. This pump is a submersible pump and is designed to be placed directly into a bucket of water. Once you plug the pump into an electrical supply, the pump will begin running. These pumps have a straight cord as a safety feature. ***A switch cannot be installed on the pump because it would eliminate the watertight aspect of the cord and can cause severe electrical shock to the user.***



Image 4



Image 5

- If you purchased a drain kit or a plumbing kit, you will need the 7/16" wrench that came with your unit and a 1/4" nut driver or a phillips head screw driver to attach the drain kit. It is best to disassemble the drain kit before trying to attach it to your sander. To attach the drain kit, you will need to remove the plug (see the silver plug in image 1) on the front of your sander using the 7/16" wrench. You'll need to turn the plug counter-clockwise (remember, lefty-loosey) to get it to unscrew. It may take a little effort to remove the plug from the casting pan. Once the plug is removed, screw the brass pipe nipple into place on the front of your unit. Make sure the brass is securely tightened to prevent any leaking from this part of your unit. Once your brass is securely attached to the sander base, slide the hose clamp over the tubing, and then slide the tubing over the brass insert. Push the tubing as close up to the pan as you can. Make sure the hose clamp is fully seated around the brass insert before tightening it down onto the tubing with your 1/4" nut driver or phillips head screw driver. Once the hose clamp is secure, your drain kit is ready to go. Put the end of the drain kit into an empty bucket to collect the dirty water. We never recommend recirculating your water supply because this can cause contamination issues with your sander.



Image 6

MAINTENANCE

- **Replacing Your Belt:** The upper sander arbor works on a pivot. At the top of the arbor there is a tri-knob that controls the tilt of the drum and at the bottom there is a lock-nut and spring. ***Never tighten the nylon lock-nut because this can cause severe damage to your casting or your arbor because of the pivot point*** (see image 7). Below the arbor, there is a bolt that is also attached to a spring. This bolt moves the arbor up and down within the upright casting. It is easiest to remove your belt while the machine is running. When you are ready to make a belt change, hold the switch in your right hand and put your left hand on the tri-knob. While the machine is ON, slowly turn your tri-knob towards the back (counter-clockwise) to loosen the upper part of the arbor. The belt will immediately begin to run off of the drums to the open section of the machine. As soon as the belt is loose and slapping (approximately 1/2 way off the drums), turn the machine OFF. With the machine OFF,

take off the loose belt and place the replacement belt around the two drums. It is best if you can slide the belt on as far as possible before tightening the tri-knob. Once the belt is in place, tighten the tri-knob by turning it towards the front of the machine (clockwise). Once the belt is relatively snug, hold the switch cord in your right hand and place your left hand on the knob. Turn the machine ON and continue to make adjustments using the tri-knob until the belt is tracking and centered over both drums. If the belt is too tight, you may have to loosen the tensioner bolt to drop the arbor drum down. This is often the case with new belts that haven't had a chance to stretch out on the machine. If your belt is making a high pitched hum or a knocking sound it is probably too tight. This can be adjusted by loosening the tensioner belt and loosening the tri-knob so the belt doesn't run to the left and into the upright casting.

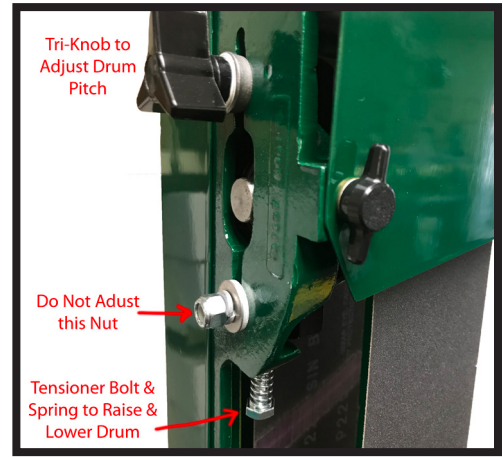
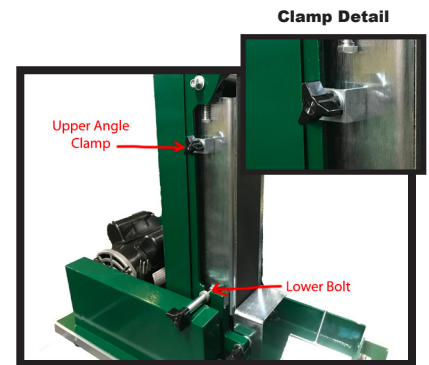


Image 7 -
Click on the Above Image to open an Instructional Video

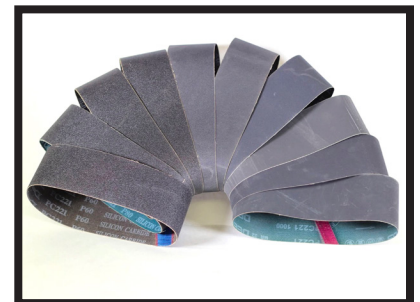
- **Belt Adjustments - Belt Tracking:** If you find that your belt is not tracking properly it is likely that the belt has stretched and you need to use the tensioner bolt to raise the arbor up. The tensioner bolt is the one on the underside of the arbor that has the large spring attached to it. Using the 7/16" wrench that came with your sander, tighten the bolt up by turning the head of the bolt clockwise (right). This will raise the arbor up. You will find that small adjustments on this bolt will have big results. Once you have tightened the bolt, you will begin to notice the belt wanting to drive off the drums to the right hand side. You will probably have to tighten up the tri-knob to bring the belt back in alignment after you have raised the tensioner bolt. Adjusting the tensioner bolt will resolve problems like the belt running too far to the left and into the upright casting. If the belt moves every time you press something against it you probably need to adjust your tensioner bolt. This means the belt is too loose and the drum needs to be raised up. You will find that belts that run wet will stretch more and faster than belts that are used in a dry application.
- **13" High Back Plate:** This plate is *included with the 761WBS model only* but available for purchase for model 760WBS. Remove your 4" backing plate by unscrewing the tri-knob (you will use the same tri-knob, spacer and washer on the 13" plate). Once the parts are loose, you can simply pull the 4" back plate out. Attach the 13" plate by holding it vertically behind the belt with the lower bolt in the bolt slot. The side of the plate should be touching the casting. Slide the 1/4" thick washer then the spacer onto the lower bolt and secure with the tri-knob. Slide the angle clamp onto the upper bolt. Add the washer and tighten the tri-knob. Position the front face of the back plate evenly behind the belt and tighten both tri-knobs.



Backing Plate Assembly Diagram

PROCEDURE

- **Sanding:** As a general rule, 80g grinds twice as fast as 220g; 220g grinds twice as fast as 400g; and 400g grinds twice as fast as 800g. If the material being sanded is medium to soft, some sanding steps can be omitted. We recommend purchasing a *Silicon Carbide Belt Kit (1 of each grit included + an extra 100g)* with the purchase of your machine. This allows you to test out the belts and figure out which ones work best for your processes. Once you have determined which grits are perfect for you, you can buy those belts in bulk for a discounted price! When you purchase 10 or more belts (mix and match grits) you can save 10%. When you buy 50+ you can save 20%.



Belt Kit

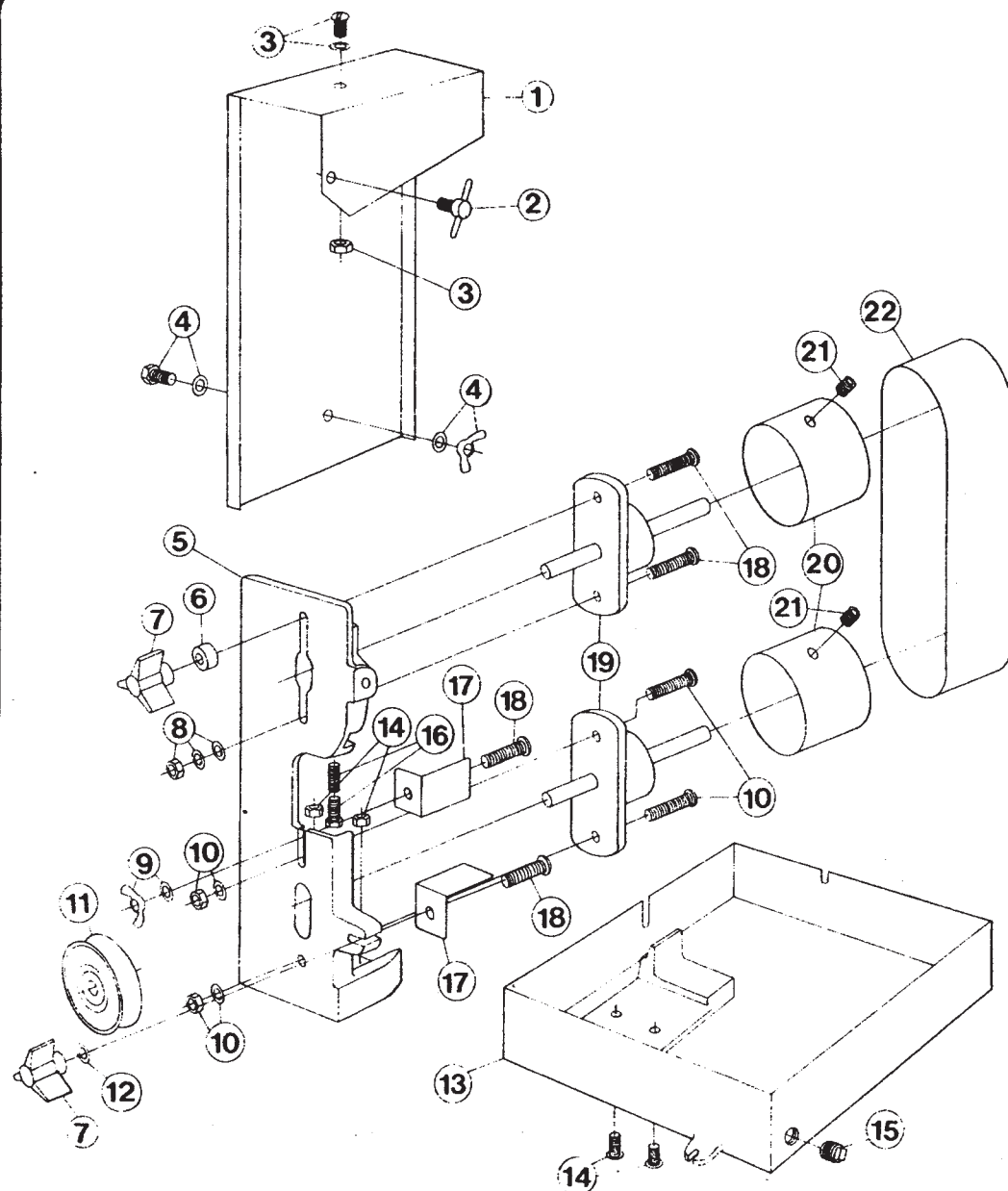
- **Diamond Belts:** Diamond belts are a bigger investment cost-wise, but will last significantly longer than the

silicon carbide, as diamond belts will not wear down as quickly. For beginners, we recommend starting with the silicon carbide belts because of the cost savings. Once you have your process down, replace the grits you use the most with diamond to reduce frequent belt changes.

- **Polishing:** The polishing operation removes minimal surface material; some materials require both pre-polish and polish steps. Pre-polish usually consist of 600g or finer silicon carbide or in the case of glass 2F or 4F pumice powder applied to a cork belt. An excellent general-purpose polishing compound is optical grade cerium oxide on a felt belt. Covington's felt belts are made out of wool and will shrink if not used and stored properly. Should you decide to polish with a felt belt, it is very important to make it the last process of the day on your machine. We recommend turning off your water valve and using a spray bottle or a similar device to keep the belt moist and charged with polishing compound. The valve can cause the belt to become oversaturated with water and can wash the expensive polishing compounds off of the belt. When you are done with your belt, let the machine run for a few extra minutes to wring out any extra water. We never recommend washing the polishing compounds from your belt. Let your felt belt dry on the machine overnight. In the morning, check to make sure it is completely dry (any moisture will cause it to mold), and then turn your machine on with the felt belt on to stretch the belt back out to proper size. You can now take the felt belt off of your machine and store it properly in a clean dry container such as a paper bag or cardboard box that will wick any residual moisture away from the belt. A sealed plastic container is not ideal since it will hold moisture and can cause the belt to mold.
- **Belt Creeping:** If the belt moves to one side when sanding, the belt may be too loose or you may be grinding above the backing plate. If you are needing to use the softer belt area above the backing plate, you may notice more belt creeping than when you use the backing plate. To keep the belt centered over your drums, press hard against the soft belt area and guide the belt with your piece. Make a belt tension adjustment by tightening or loosening the vertical bolt with spring (see belt adjustment above).
- **Wear Out:** A well-used belt will leave a finer finish than when the belt was new. A well-worn fine grit belt may be used as a pre-polish belt. Sanding belts do not lose their usefulness until the belt backing wears out.

*****We recommend logging your trials using a chart like the one below. This helps you track and repeat effective processes.***

Material Type	Belt Material	Belt Mesh or Polish	Notes
Glass	Felt	Cerium	I tried this combination and had great results!



model 464

wet sander

- 1 hood
- 2 $\frac{1}{4}$ -20 x $\frac{1}{2}$ "t" bolt
- 3 $\frac{1}{4}$ -20 x $\frac{1}{2}$ t.h. bolt, fiber washer, nut
- 4 $\frac{1}{4}$ -20 x $\frac{5}{8}$ h.h. bolt, fiber washer, $\frac{1}{4}$ " washer, wing nut
- 5 #124 upright bearing casting
- 6 $\frac{1}{4}$ " thick washer
- 7 $\frac{1}{4}$ -20 tri-knob
- 8 $\frac{1}{4}$ -20 plastic lock, lock washer, $\frac{1}{4}$ " washer
- 9 $\frac{1}{4}$ -20 wing nut and washer
- 10 $\frac{1}{4}$ -20 x 1 c.c. bolt, sae washer, nut
- 11 3a $\frac{5}{8}$ pulley
- 12 $\frac{1}{4}$ " washer
- 13 #42 tank
- 14 $\frac{1}{4}$ -20 x 1 $\frac{1}{4}$ f h. bolt and nut
- 15 $\frac{3}{8}$ " pipe plug
- 16 $\frac{1}{4}$ -20 x 1 $\frac{1}{4}$ h.h. cap screw and spring
- 17 backing plate
- 18 $\frac{1}{4}$ -20 x 1 $\frac{1}{4}$ c.c. bolt
- 19 #142 arbor
- 20 #109 sanding roller
- 21 $\frac{3}{8}$ x $\frac{1}{2}$ socket set screw
- 22 sanding belt 3 x 24

