

Operating & Maintenance Instructions for the New Linders Abrasive Belt Coper Model LCV2000

Setting Up Your New Linders Abrasive Belt Coper

Initial assembly and wiring:

Upon unpacking your Coper, you will find the feed handle screwed to the bottom of the crate. Attach the handle to the Coper head as shown on the assembly drawing. Wire your machine for the voltage and phase marked on the motor and as indicated in the electrical box; see "Connecting Power to the Contactor." Check for proper rotation. The motor should rotate counterclockwise as observed facing the outer end of the drive pulley.

DANGER

Proper rotation is extremely important for operator safety. Sparks will be thrown up and into the operator's face if rotation is reversed.

ALWAYS WEAR EYE PROTECTION WHEN OPERATING MACHINERY!

Intended Use

Grinding to fit to a round work piece:

1. This machine is intended to cope or grind the end of a round, square, rectangle or irregular-shaped piece held in the vise to fit a round part and obtain a hairline fit at angles of 90 degrees or less.
2. The spindle (the piece the grinding belt goes around at the front of the machine) is interchangeable for different diameters of pipe or tubing.

Changing Spindles

To change spindles:

1. Loosen the 5/16 fine thread bolt on the right side of the aluminum spindle while applying resistance with a wrench on the flats machined in the spindle shaft on the left side of the spindle.
2. Slide the spindle off the shaft and replace with the spindle of the desired size.
3. Tighten the 5/16 bolt to hold the spindle in place.

Changing Grinding Belts

To change belts on your new Linders Abrasive Belt Coper:

1. Remove the belt guard by completely unscrewing the hand knobs located on the right side of the machine, and pulling the guard housing straight off to the right to clear the studs and belt.
2. Loosen the lock handle on the left side of the sliding block assembly located at the front of the machine under the pillow block bearing.
3. Turn the small handle on the front of the sliding block clockwise to loosen the belt.
4. Remove the belt by sliding it off the spindle and drive roller.
5. Replace the belt in the reverse order of removal.
6. The belts provided with the coper are bi-directional. Make sure that you check for directional arrows if you are using another type of belt.

Note

When tensioning the belt, use only enough tension to provide proper tracking. Make sure the locking handle is tightened securely before operating the machine. The standard belt is 4 inches wide by 132 inches long. A 36-grit compound of zirconium or ceramic is recommended for most applications.

DANGER

BE SURE BELT GUARD IS PROPERLY IN PLACE BEFORE RUNNING THIS MACHINE. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY!

Operating Procedure

Making a cope:

1. Cut your work piece to the desired angle before making the cope. Pre-mitering will greatly improve belt life and will help prevent cutting the belt with the corner edges of the work piece.
2. Clamp mitered work piece in the vise. Note orientation of the cut.
3. Loosen the swing lock knob and set the angle of the vise to match the miter on the end of the work piece to the face of the grinding belt. Retighten the knob.
4. Retract the vise and slide the work piece up to the grinding belt and retighten the vise. If the work piece does not line up properly with the grinding belt see "Adjusting horizontal position."
5. Start the motor by stepping on the foot pedal.
6. Feed the work piece into the grinding belt using moderate pressure on the feed handle as you pull the handle toward you.

Adjusting the vertical center line offset:

Your machine comes factory set to cope on center. Should realignment become necessary:

1. Remove the belt guard as outlined in "CHANGING GRINDING BELTS."
2. Loosen the swing lock knob and swing the vise 90 degrees.
3. Open the vise until the small notch in the vise aligns with the 5/16 bolt that holds the spindle on.
4. Loosen the lift lock handle on the front of the right vise jaw ½ turn.
5. Loosen the check nut and turn the lift knob to raise and lower the vise jaws to align the notch in the jaws with the center of the 5/16 bolt.
6. The lift knob is threaded with a 3/8-16 thread. Sixteen (16) turns will raise the vise 1 inch from center.

Adjusting horizontal position:

Used to center work piece on the grinding belt when coping at an angle or to extending belt life when coping small diameter pieces with wider grinding belts.

1. Loosen the slide lock handle on the left vise jaw.
2. Slide the left jaw left or right depending upon your desired outcome.
3. Tighten the slide lock handle to secure the left jaw.

Maintenance

To keep your new Linders Abrasive Belt Coper running like new:

1. Grease the pillow block bearings at the front of the machine periodically. Add approximately one cubic inch of grease to each bearing at three-month intervals.
2. Do not allow grinding dust to accumulate in the belt guard. Always dump grinding dust when removing the guard to change belts.

DANGER

IF GRINDING DUST IS ALLOWED TO ACCUMULATE IN THE BELT GUARD IT MAY CATCH FIRE AND RESULT IN SERIOUS INJURY AND PROPERTY DAMAGE.

Connecting Power to the Contactor *

For three phase motors: Connect the input voltage lines to L1, L2, and L3, and the ground line to the ground bus on the bottom of the plastic case. When running the coper for the first time, verify that the motor is rotating the proper direction for operation. If it is running backwards, swapping two of the input voltage lines will reverse the direction of rotation of the motor.

For single-phase motors: Connect the input voltage lines to L1, and L2, and the ground line to the ground bus on the bottom of the plastic case. When running the coper for the first time, verify that the motor is rotating the proper direction for operation. If it is running backwards, swapping the two input voltage lines will reverse the direction of rotation of the motor.

**(Check wiring diagram provided with instructions)*

Verify Overload Relay Settings

220 Volt single phase 5 hp: setting on dial should be at 20.

230 Volt three phase 5 hp: setting on dial should be at 12.

460 Volt three phase 5 hp: setting on dial should be at 6.

Running a Single Phase Motor Coper

It is important to make sure the motor is up to operational speed before starting a cope. If the coping load is applied before operational speed is attained, the start capacitor will stay engaged and it will fail.

Checking out the electrical circuit of the coper.

Before removing power from the coper verify that the overload relay is set in the Auto mode. If it is in the manual mode push the reset button and try again.

Reaying the coper for the electrical check out should be accomplished by either unplugging the coper from an electrical outlet or by turning off a junction box. Verify that no voltage is present on terminals L1, L2, and L3.

After verification that power has been removed, testing can begin. Using a continuity meter, place one lead on L1 and another on A1 and then apply pressure to the foot switch pedal; the reading on the meter should register zero ohms. If this is the reading you received, then the foot switch is O.K.

Next you need to check the coil in the contactor. Apply the test leads to A1 and A2.

Reading per contactor voltage:

460 V 3 phase – 1850 – 2000 ohms

230 V 3 phase -- 350 – 400 ohms

220 V 1 phase – 400 – 500 ohms

If any of the resistance readings are drastically different, the contactor coil is bad.

The next item to check is the overload relay. Apply test leads to A2 on the contactor and 95 on the overload relay; a zero ohm reading should be registered. Next apply the test leads to 95 and 96 on the overload relay; the resistance reading should be between 0 and 1 ohm. If this value reads infinity, the overload relay has tripped. Try resetting the overload relay by pushing the blue reset button. If the value between 95 and 96 remains at infinity, then the overload relay is bad.

Another check to the overload relay is to check the continuity between the contactor T1 and the overload relay T1; the resistance reading should be between 0 and 1 ohm. Then check between the contactor and overload relay T2's and T3's; they should have the same readings as the T1's. If any of these checks yields a reading of infinity or close to infinity, the overload relay is bad.

Congratulations on the purchase of the new Linders Abrasive Belt Coper. The fit up, afforded by its unique design features, will allow construction of previously difficult, time-consuming or impossible connections in steel, stainless, aluminum, brass, wood, PVC and other materials. The hairline fit will allow brazing, silver soldering and TIG welding to be done with little more than basic de-burring as joint prep. Weld cleanup is reduced to a minimum for quick, efficient fabrication. With proper care and maintenance, your machine will give a lifetime of accurate fit ups and new possibilities. Take the time to experiment with your new Coper as you push the limits of design and fabricating like you've never done before.

Thank You!

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