

 **OVERBECK MACHINE**
Santa Cruz • Californ
TWISTER OWNERS MANUAL



LT-1BR



LT-2AR

MODEL: _____

SERIAL NUMBER: _____

BORN ON DATE: _____

OVERBECK MACHINE TOOLS
953 TOWER PLACE, UNIT E
SANTA CRUZ, CA 95062
(831) 425.5912 FAX (831)423.9363
INFO@OVERBECKMACHINE.COM
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WARNING ! Using this product can expose you to chemicals that are known to the state of California to cause cancer and birth defects or reproductive harm. For more information go to <https://p65warnings.ca.gov/>

SERVICE RECORD

Date: _____

Service Performed: _____

Date: _____

Service Performed: _____

Date: _____

Service Performed: _____

Date: _____

Service Performed: _____

Date: _____

Service Performed: _____

Date: _____

Service Performed: _____

Date: _____

Service Performed: _____

Date: _____

Service Performed: _____

Read this complete manual before attempting to operate your Twister Speed Lathe!

We urge you to review the following warnings, procedures and operations. All persons involved in setting up, operating, or servicing the machine are required to read this manual prior to starting any service work or use.

If you have any questions about this machine, call us at 1-831-425-5912

We strongly suggest that anyone who will set-up, operate, or be in the vicinity of the *Twister Speed Lathe* while it is being used should read all of the following recommendations:



! WARNING this machine can expose you to chemicals that are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <https://www.p65warnings.ca.gov/>



! NEVER attempt to operate this machine in a damp or wet area.

! NEVER use liquid of any type in your use of the Twister machine.

! NEVER operate the Twister machine unless you are using approved safety glasses, hearing protection and a dust mask. Consult with your safety manager for proper or approved PPE.

! NEVER attempt to operate this machine without first having its installation and your set-up checked by a person qualified to do so.

! NEVER service or maintain the Twister machine without first disconnecting the machine from the power source. Modification of the Twister in any way will void your warranty. Use of non-factory replacement parts will also void your warranty and lead to degraded or unsafe mechanical or electrical function. Use of non-factory parts can lead injury, including death.

! NEVER use chucks or fixtures in the spindle of the Twister machine.

! NEVER wear gloves while operating the Twister machine.

! NEVER open or close the collet closer while the spindle is rotating.

! NEVER start the Twister machine unless the collet lever is in the closed position.

! NEVER start the Twister machine unless a collet is in the spindle.

! NEVER press the spindle lock plunger with the Twister spindle still rotating.



! DO NOT allow any material or your part to protrude more than three (3”) inches from the Twister spindle end or closer end at any time.

! DO NOT attempt to polish or deburr out-of-balance or out-of-round parts.

! DO NOT operate this machine while wearing a ring, a watch, jewelry, a tie, loose clothing, or long hair, which is not contained by a hair net or shop hat.

! DO NOT leave the Twister machine unattended while it is running.

END OF DAY CLEAN UP: At the end of your day or shift, take a few moments to wipe the Twister machine down to remove any dust or debris that has built up. Remove the collet that was used for your work and wipe the inside of the spindle taper. Note any functional or safety issues observed and report them to the shift manager or responsible party. Doing this on a daily basis will keep your machine in a safe and good state of operation. Best of all, you will start your day using a clean machine.

1. SAFETY and SAFEGUARDS

1.1 Dangers Associated With This Machine

The Twister polishing/deburring machine is designed exclusively for the applications outlined in this manual. Any circumstances interfering with the safe use of this machine are to be remedied immediately. Any modification to the machine by the end-user can create safety issues that can lead to injury including death. Modifications to the Twister machine by the end-user are expressly not approved and not the responsibility of Overbeck Machine Tools.

1.2 Appropriate Use of This Machine

The Twister Speed Lathe is designed and intended for sanding, polishing, deburring, filing, scraping, gauging and assembly operations. Any use outside of the above intended purposes is not approved and is done at your own risk.

1.3 Emissions

The Twister Speed Lathe has an operational noise level of approximately 68 db(A). Also, there are dust and fumes associated with polishing and sanding materials.

1.4 Hazards and Dangers

Warning ! The Twister Speed Lathe has unguarded, spinning parts:

Any attached work holding devices (collets), the collet closer assembly and knurled ring. Those parts and assemblies can inflict injury to hands, fingers and eyes. Insufficient clamping force on a part or an unbalanced part that may be thrown off the machine can cause serious injury. Keep your fingers and hands away from the above noted spinning parts.

1.5 Safety Requirements During Use

To avoid accidents by inadvertently knocking the Twister Speed Lathe off the work surface or work bench, it is recommended to bolt the machine to the table and/or place the machine no less than three inches (3”) from the forward edge of the work surface.

1.6 Machine Safeguards

The Twister Speed Lathe can be switched off using the front panel ON-OFF switch during an emergency situation. Further, the spindle can be stopped by lifting off the foot switch or switching the front panel forward-reverse switch to the neutral position.

1.7 Qualified Personnel

All personnel setting up or operating the Twister Speed Lathe must be qualified and authorized to do so. The owner's manual must be provided to the operator. It is the owner's responsibility to ascertain the operator's understanding of the manual.



1.8 Personal Protective Equipment (PPE)

Safety glasses that meet at minimum ANSI Z87+ specification or provided by your company for use during the operation of the Twister Speed Lathe. Further, use of hearing protection that meets NRR 32db reduction at minimum or equipment provided by your company. Last, a dust respirator that meets the N95 specification or equipment provided by your company. Use of the above three (3) safety items are required during the use of the Twister Speed Lathe. Use of the above three (3) items does not guarantee your safety or impact to your health. Improper use of the Twister machine can cause injury or death. It is your responsibility to work in a safe manner using proper PPE.

2.0 Installation

Have you read and fully understand Section 1, Safety and Safeguards? The Twister Speed Lathe may not be operated without doing so.

Note: The foot switch will start the LT-1BR and LT-2AR any time the power switch is in the ON position and the Forward/Reverse switch is in FORWARD or REVERSE position.

2.1 Setting up and mounting the LT-1BR (See figure 1)

The LT-1BR **MUST** be removed from the shipping base before using it or stability of the Twister on your work surface will be suspect as well as slippage of the drive belt can result.

- A) Set up the LT-1BR where you need it, make sure it is placed on a clean, dry and level surface. Do not place the Twister closer than three inches (3") to the edge of the mounting surface to minimize accidental contact by surrounding personnel.
- B) The machine can be fastened down with a 5/16-18 fastener screwed into the tapped hole on the bottom of the machine. Drill a 5/16 diameter hole through the work bench approximately 13 inches (13") from the front bench edge and located side-to-side so that it will line up with the center of your LT-1BR. Select a fastener that has a length equal to the thickness of the work surface plus 1-1/4" **If the mount bolt is too tight, the Twister drive belt will slip. The fastener must not protrude more than 1-1/2" above the work surface, or damage to the Twister motor will result.**

2.2 Setting up and mounting the LT-2AR (See figure 2)

- A) Set up the LT-2AR where you need it, making sure it is placed on a clean, dry and level surface. Do not place the Twister LT-2AR closer than three inches (3") to the edge of the work surface to minimize accidental contact by surrounding personnel.
- B) The LT-2AR has three .50" diameter holes available to fasten it down. Since the casting is a lightweight aluminum alloy, care must be exercised not to distort the casting when bolting it down. If you are attaching it to a work bench, we recommend rubber pads under the LT-2AR and rubber bushings around the .25"

diameter fasteners. The fasteners should only be tightened enough to slightly compress the rubber pads. The **LT-2AR** should have no lateral movement. If you are mounting to a flat machined surface, no rubber pads are needed. Simply fasten the machine to the work surface using 3/8" diameter fasteners. Torque them to 10 Ft-Lb maximum.

3.0 Operation

Have you read and understand Section 1, Safety and Safeguards? The machine may not be operated without a full understanding of Section 1 and 2.

3.1 Collet Specification for all Models

The 5C collets used on all Twister models must conform to the drawings shown in **Figure 3** and **4**. The two most important features are the 1.2500" inch diameter and width of the thread relief. If your collets have a thread relief wider than **.100" inch** you run the risk of the collet rotating and allowing the spindle key to get permanently stuck in the thread relief. If this happens, your machine will require factory repair. We strongly recommend using only collets from a known manufacturer that meet these specifications. Oversize 5C collets up to three (3") inches in diameter may be used in the Twister Speed Lathe. The collets **MUST** have the 10 degree taper as shown in **figure 3**.

3.2 Adjusting Collet Tension

- A) Make Sure the Main **POWER** Switch is in the **OFF** position.
- B) Insert the 5C collet into the spindle and rotate the collet to align the collet keyway to the spindle key. **COLLET AND SPINDLE BORE MUST BE CLEAN!** Slide the closer handle (Fig. 5) to the Right
- C) Release the adjusting finger (Fig. 5) by pressing down into the depression on the collet closer.
- D) With your Left hand rotate the knurled knob (Fig5) clockwise while pressing the collet in, to engage the collet threads. Use your Right hand to prevent the collet from getting pushed out of the spindle. Thread the closer onto the collet about 2 turns only.
- E) Insert a workpiece into the collet and push the closer handle to the Left. Continue rotating the knurled knob clockwise until it gets snug. Should the spindle begin to rotate, push and hold the spindle lock (Fig. 5) It will lock the spindle and prevent rotation.
- F) Move the closer handle all the way to the Right and rotate the collet closer clockwise two to four more notches on the sector plate (Fig. 5). Check to see if the collet is gripping the workpiece with the desired firmness by moving the closer handle to the Left.
- G) Once you find that the collet is gripping the workpiece properly, lock the adjusting finger by pushing down on the Right side of the finger. Make sure that the finger engages a slot in the sector ring fully, if not, release the closer handle and slightly rotate the knurled ring clockwise or anti-clockwise in order for the adjusting finger to fall into one of the slots on the sector ring. Re-lock the adjusting finger in the sector ring and lock/close the closer by moving the handle to the Left. Your work should be held tight at this point.
- H) The Twister Speed Lathe is now ready for processing your workpiece. It is not necessary to adjust the collet again for that specific workpiece as long as the work diameter does not vary. All you need to release the part or clamp the part is move the closer handle to the Left to clamp and Right to release. Remember, only move the closer lever when the spindle is not rotating.

3.3 Start and Stop the Spindle using the Brake-Run Switch

- A) After the part is firmly locked in the collet, turn the Main **POWER** switch to **ON**, set the **SPINDLE ROTATION** switch to **NORMAL** or **REVERSE**, and turn the **BRAKE-RUN** switch to **RUN**.
- B) Select the desired speed by turning the **SPINDLE SPEED** knob.
- C) In order to stop the spindle, move the **BRAKE-RUN** switch to the **BRAKE** position.

3.4 Start and Stop the Spindle using the Foot Switch

A) If the foot switch is being used, leave the **BRAKE-RUN** switch in the **BRAKE** position. Press the foot switch for spindle start and rotation, release the foot switch for the spindle to stop.

3.5 Changing the Spindle Direction

A) Switch the **SPINDLE ROTATION** switch to the desired rotation direction, **NORMAL** or **REVERSE** spindle rotation direction.

3.6 Operational Notes

Generally, polishing is done at high speeds, deburring at low speeds, the bigger the part diameter, the lower the speed needed. Select a slow speed for filing and scraping without chatter. If chatter becomes a problem make sure your scraper is very sharp and if necessary, reduce the spindle speed. Polishing is usually done at as fast a spindle speed as possible without burning or smearing the part or sandpaper.

Remember, your Twister normally functions smoothly and easily. If a collet will not fit or parts can't be gripped without constant re-adjustments (assuming parts do not vary in size), check for dirty or damaged collet threads, or a badly worn collet. Keep the collet and draw tube threads clean to eliminate potential problems. If you have any functional problems, please feel free to call and discuss your Twister machine issues.



FIGURE 1



FIGURE 2

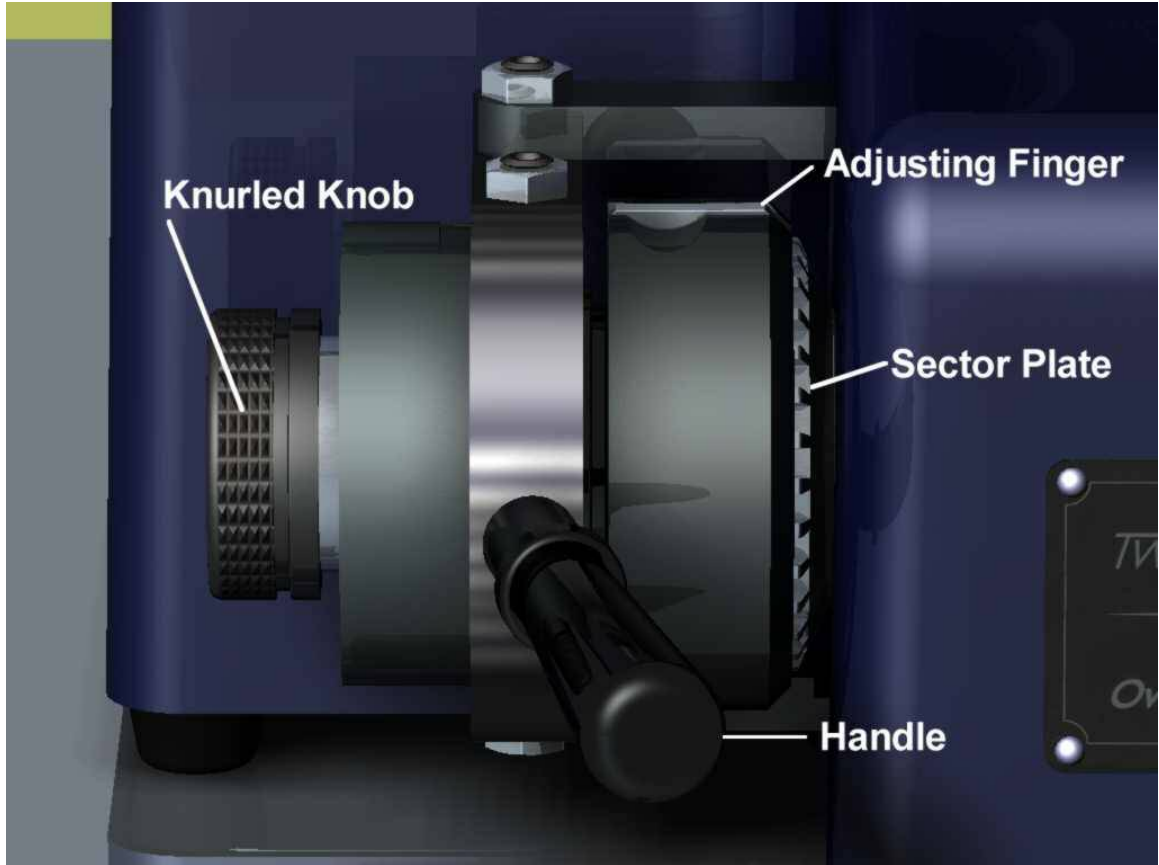


FIGURE 5

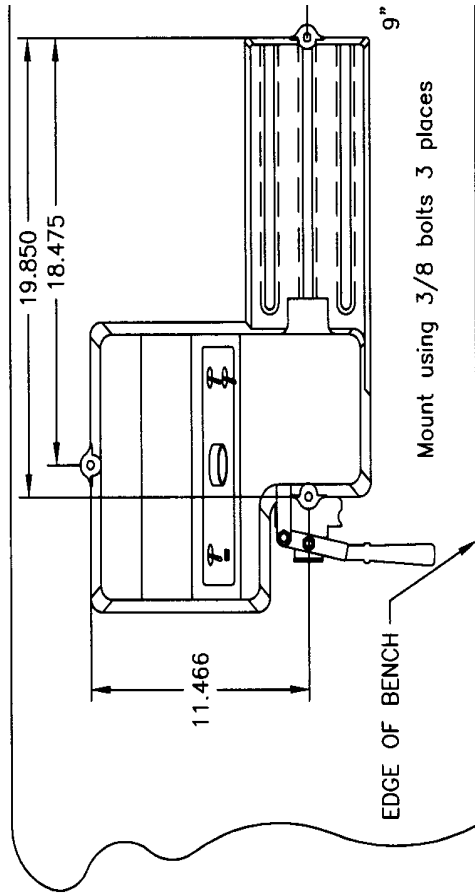


FIGURE 2

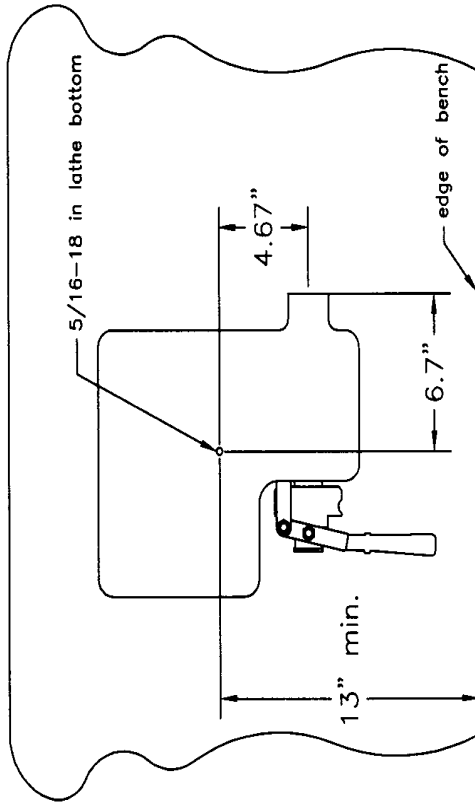


FIGURE 1

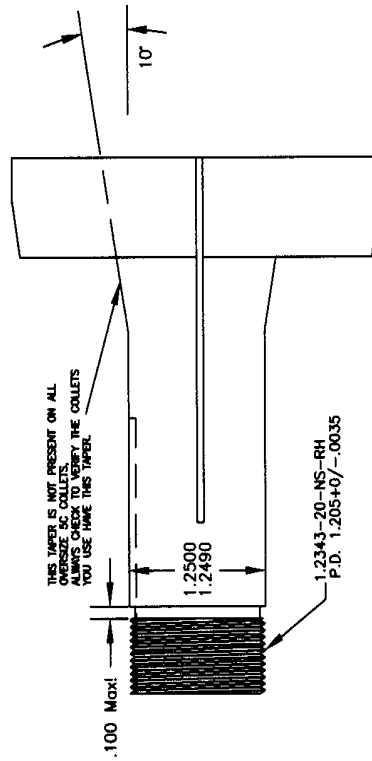


FIGURE 3

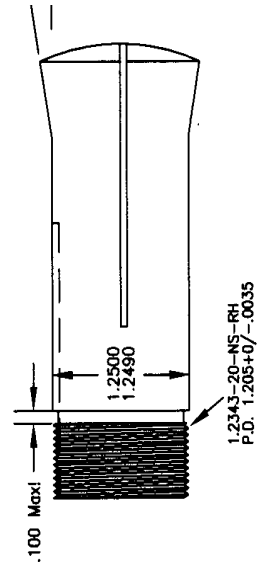


FIGURE 4



ADJUSTING FINGER

SECTOR PLATE

KNURLED RING

HANDLE

TWISTER COLLET CLOSER END



PLUNGER, SPINDLE LOCK

TWISTER SPINDLE END

TWISTER FRONT PANEL

