

OTMT

OT330B

GEAR DRIVE LATHE



ITEM NO. 87-115-996
MODEL NO. OT330B

Version date: 01/06/2017

Please Read These Instructions Before Operating Your Machine
Contents Subject To Change Without Notice

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GENERAL SAFETY RULES FOR POWER TOOLS

WARNING—DO NOT ATTEMPT TO OPERATE UNTIL YOU HAVE READ THOROUGHLY AND UNDERSTAND COMPLETELY ALL INSTRUCTIONS, RULES, ECT. CONTAINED IN THIS MANUAL. FAILURE TO COMPLY CAN RESULT IN ACCIDENTS INVOLVING FIRE, ELECTRIC SHOCK, OR SERIOUS PERSONAL INJURY. MAINTAIN OWNERS MANUAL AND REVIEW FREQUENTLY FOR CONTINUING SAFE OPERATION, AND INSTRUCTING POSSIBLE THIRD -PART USER.

READ ALL INSTRUCTIONS

1. Know your power tool.

For your own safety, read the owner's manual carefully. Learn its application and limitations as well as the specific potential hazards peculiar to this tool.

2. Guard against electrical shock by preventing body contact with grounded surfaces.

For example: Pipes, radiators, ranges refrigerator enclosures.

3. Keep guards in place and in working order.

4. Remove adjustment keys and wrenches.

Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning on tool.

5. Keep work area clean.

6. Don't use in dangerous environment.

Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well illuminated.

7. Keep children away.

All visitors should be kept a safe distance from work area.

8. Make workshop child proof.

It will do the job better and be safer at the rate for which it was designed.

9. Don't force tool.

10. Use right tool.

Don't force tool or attachment to do a job for which it was not designed.

11. Wear proper apparel.

No loose clothing, gloves, neckties, rings bracelets, or jewelry to get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

12. Always use safety glasses.

Also use face or dust mask if cuffing operation is dusty. Everyday eyeglasses only have impact -resistant lenses. They are not safety glasses.

13. Secure work.

Use damps or a vise to hold work when practical. It's safer than using your hand and free both hands to operate tool

14. Don't overreach.

Keep your proper footing and balance at all times

15. Maintain tools in top condition.

Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16. Disconnect tools from power source.

Before servicing and when changing accessories such as blades, bit cutters or when mounting and remounting motor.

17. Avoid accidental starting.

Make sure switch is in "OFF" position before plugging in cord.

18. Use recommended accessories.

Consult the owner's manual for recommended accessories. Use of improper accessories may be hazardous.

19. Never stand on lathe.

Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.

20. Check damaged parts.

Before further use of the lathe, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of pads, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

21. Direction of feed.

Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.

22. Never leave tool running unattended. Turn power off.

Don't leave tool until it comes to a complete stop.



The operation of any power tool can result in foreign objects being thrown into the eyes, which can result in severe eyes damage. Always wear safety glasses or eye shields before using your lathe. We recommend wide vision safety mask or standard safety glasses.



SAFETY RULES FOR LATHES

Safety is a combination of operator common sense and alertness at all times when lathe is being used. Study these safety rules and general safety rules before operating and retain for future use.

1. Wear eye protection.
2. Never attempt any operation or adjustment if procedure is not understood.
3. Keep fingers away from revolving parts and cutting tools while In operation.
4. Never force cutting action.
5. Never perform an abnormal or little used operation without study and use of adequate blocks, jigs stops, fixtures etc.
6. Use of shop manual such as 'Machinery's Handbook' or similar is recommended for cuffing speeds, feeds and operation detail.
7. Do not remove drive cover while machine is in operation. Make sure it is always closed.
8. Always remove chuck key, even when machine is not in operation.
9. Do not attempt to adjust or remove tools when in operation.
10. Always keep cutters sharp.
11. Never use in an explosive atmosphere or where a spark could ignite a fire.
12. Always use identical replacement parts when servicing.

WARNING:

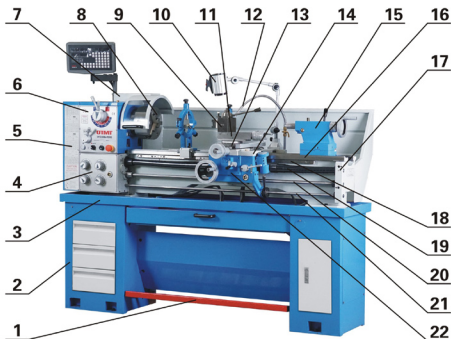
DO ALLOW FAMILIARLY (GAINED FROM FREQUENT USE OF YOUR LATHE) TO BECOME COMMONPLACE. A CARELESS FRACTION OF A SECOND CAN ALLOW FOR SEVERE INJURY.

MACHINE SPECIFICATION

Bench lathes are especially suitable for machining. Tool rooms and repairing workshops to machine shafts, spindle, sleeves, and disc workpiece of middle or smaatypes. They can also be used to cut imperial, metric thread, and with compact construction and reasonable composition, they can cut very well. They are easy and reliable to operate, convenient to repair, high in efficiency, and low noise.

TECHINCAL SPECIFICATION	
Swing Over Bed	330mm(13")
Swing Over Cross Slide	198mm(7.79")
Swing Over Gap	465mm(18.31")
Center Height	166mm(6.54")
Distance Between Centers	1000mm(39.37")
Bed Width	186mm(7.36")
Bed Height	308mm(12.13")
Motor Output	2HP(1.5kw)
Voltage	220V/3PH/60Hz
Spindle Bore	52mm(2.01")
Spindle Taper	MT6
Camlock System	D1-5
Spindle Speed	90-2000RPM
Cross Slide Travel	175mm(6.89")
Compound Slide Travel	76mm(3")
Leadscrew Diameter	22mm
Feed Rod Diameter	19mm
Imperial Thread	2-1/4-40T.P.I.
Metric Thread	0.45-10mm
Longitudinal Feed	0.0055"-0.0731"/rev(0.140-1.857mm/rev)
Cross Feed	0.0016"-0.0212"/rev(0.041-0.538mm/rev)
Tailstock Quill Diameter & Taper	32mm, MT#3
Net Weight (approx.)	580 kg(1276 lbs.)
Shilping Weight (approx.)	650 kg(1496 lbs.)

MACHINE ASSEMBLY & STANDARD ACCESSORIES



Machine Assembly

1. Foot brake
2. Foot stands
3. Chip tray
4. Gearbox
5. End cover
6. Headstock
7. Electric control box
8. Spindle with 3-jaw chuck
9. Quick change tool post
10. Halogen worklight
11. Top slide
12. Coolant system
13. Cross slide
14. Saddle
15. Tailstock
16. Bed way
17. Bracket
18. Rack
19. Leadscrew with safety guard
20. Feed rod
21. Switch rod
22. Apron

Standard Accessories

1. Center Sleeve MT#5-MT#3
2. 2 Fixed Centers MT#3
3. Three Jaw Chuck
4. 2 V-belts
5. Change Gears
6. Tool Box
7. Grease Gun

UNPACKING

Unload the machine with a tackle, using clamping plates and eye bolts. Keep the machine in balance by moving the tailstock and the bed slide to the right. Avoid using sling chains as they could damage feed rod and leadscrew. Lift the lathe carefully and place it softly on the floor or workbench.

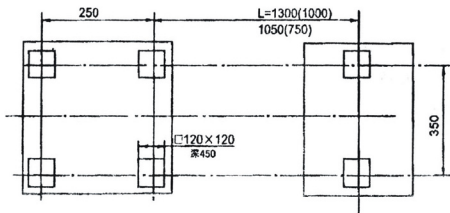
CLEANING

Before putting the machine into operation, using kerosene (paraffin) or white spirit to remove the anti-corrosive coating of grease from all slide ways and gear train. Don't use lacquer thinner or other caustic solvents. Oil all bright machine surface immediately after cleaning. Use heavy oil or grease on the change gears.

INSTALLATION

Place the lathe on a solid foundation. A concrete floor is the best base for the machine (If necessary, use an under frame optional). Make sure there is sufficient area around the lathe for easy work and maintenance. Use a precision level on the bedways to make further adjustment for level condition, then tighten the foundation bolts evenly and finally recheck for level condition.

FOUNDATION DRAWING



LUBRICATION

Before putting the lathe into operation, make the following lubrication check.

A. HEADSTOCK

The bearings of the headstock turn in an oil bath. Ensure that the oil level reaches three quarters of the oil gauge glass.

For changing the oil, remove the end cover and the change gears with swing frame. Drain off the oil by removing the drain plug on the bottom of the headstock. To fill, take off the headstock cover.

Check the oil level regularly. The first oil change should be made after 3 months, then change it once a year.

B. GEAR CASE

Remove the end cover to expose the filling plug. Through it the Shell Tellus 32 is filled to the oil level in the oil gauge glass regularly. The first oil change should be made after three months, then change it once a year.

C. APRON

The oil bath is filled with Shell Tellus 32 through the filling plug on the right side of the apron. Check the oil level in the oil gauge glass on the front regularly. The first oil change should be made after three months, then change it once a year.

For changing the oil, drain away all oil by taking off the drain plug on the bottom of the apron.







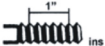




D. CHANGE GEARS

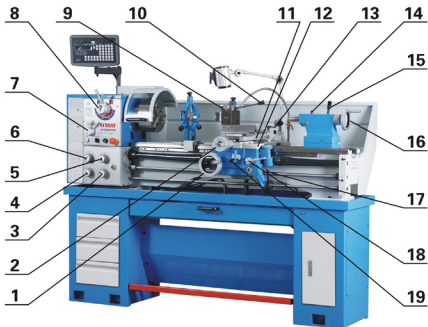
Lubricate the change gears with thick machine oil or grease once a month.

E. OTHER PARTS

There are other lubricating points on the input shaft bracket of the gear box, the handwheel on the apron, the longitudinal and cross slide, the thread dial indicator, the tailstock and the bracket, use the grease gun to put a few drops of oil from time to time. Lubricate the apron worm and worm gear, half nut and leadscrew twice a month. Apply a light oil film to the bed way and all other bright parts, like the tailstock quill, feed rod etc. once a day.

OPERATION: SYMBOLS FOR OPERATION

	<p>Electrical (danger)</p>		<p>Diamtral pitch thread</p>
	<p>Coolant</p>		<p>Module pitch thread</p>
	<p>Metric thread</p>		<p>Half nut opened</p>
	<p>Imperial thread</p>		<p>Half nut closed</p>
		<p>Right-hand thread and Longitudinal feed toward the headstock side (Left figure)</p>	
		<p>Left-hand thread and Longitudinal feed toward the tailstock side (Right figure)</p>	
		<p>Feeding (Left figure) Threading (Right figure)</p>	
		<p>Longitudinal feed engaged (upward) Both longitudinal and cross feed disengaged (central) Cross feed engaged (downward)</p>	



1	Longitudinal Traverse Handwheel	11	Cross Slide Lock
2	Cross Traverse Handwheel	12	Saddle Lock
3	Feed Selector Handle	13	Compound Rest Handwheel
4	Feed Selector Handle	14	Tailstock Quill Clamping
5	Feed Selector Handle	15	Tailstock Lock
6	Feed/thread Selector Handle	16	Tailstock Handwheel
7	Feed Direction Selector	17	Forward/reverse Switch
8	Speed Selector (2pc.)	18	Thread Cutting Engagement Lever
9	Compound Rest Lock	19	Feed Axis Selector
10	Tool Post Clamping Lever		

SPINDLE SPEED CONTROL

IDENTIFICATION BEFORE OPERATION

Ensure that lubrication has been carried out as described before.

When the main spindle is rotating, the gear box and feed axis of the bedshde are put into operation.

The forward/reverse switch should be on neutral..The feed axis selector and feed/thread selector handle are in disengaged position. Under this circumstance, both the longitudinal traverse hand wheel and cross traverse handle can be operated by hand.

MAIN SPINDLE ROTATION

The main spindle rotation is selected by the forward/reverse switch.

MAIN SPINDLE SPEED

The speed of the main spindle is selected by (high/low) speed selector and 4 steps speed selector For both high and low speed, there are 4 different positions. For correct speed, please refer to the speed chart.

When selector is on "high", we can get the four speeds, according to the graph.

NEVER CHANGE THE SPEED BEFORE THE MOTOR. HAS STOPPED COMPLETELY!

Adjusting the speed can be assisted by turning the main spindle by hand.

RUNNING-IN

Running-in should be done at lowest possible spindle speed. Let the machine run at lowest speed for about twenty minutes. Then check for irregularities. If everything seems in order, gradually increase the speed.

OPERATION

Use only high speed type chucks.

The maximum spindle speed for chuck plate of 254mm(10") diameter should not be more than 1255 RPM. When thread cutting or auto feeding are not in use, the feed/thread selector should be in neutral position so as to ensure disengagement of the leadscrew and the feed rod. To avoid unnecessary wear, the thread dial indicator should be out of mesh with the leadscrew.

SPINDLE NOSE-LOCK SYSTEM

When mounting the chuck, face plates and other attachment, ensure that the location faces on both nose and attachment are scrupulously clean. All the cams should be in the release position (Fig 1). Mount the attachment onto the spindle nose. Lock each cam by turning it clockwise, using the provided key. Make rash check on face plate with a reference line for subsequent remounting.

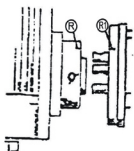


fig.1

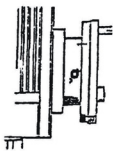


fig.2

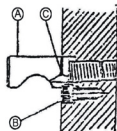


fig.3

NOTE:

For correct locking condition, each cam must tighten with its index line between the two "V" marks on the nose.

Do not interchange chucks or other attachment without checking each cam for correct locking.

To adjust camlock studs, remove lock screw B and A one full turn in or out as required. Refit and tighten screw B, each stud. A datum ring (C) is marked on each stud as guide to original or Initial setting.

THREAD AND FEED SELECTION

All threads and feeds are indicated on the table fitted on the front and top of the gearbox. They are selected with the feed selector handle on the gear box.

A. Manual Operation

The carriage is moved by the bandwheel, the cross slide by handwheel and the compound rest by handwheel. The slide can be anchored by turning the lock bolts on the top of the slide.

B. Automatic Feed Operation

Firstly, engage the 40T change gear at the transmission shaft and the 127T intermediate gear with feed direction selector, next, set the feed/thread selector to the left hand position and position one lever at any of the 1–8 holes, the other at any of A–E holes, thus the feed rod will rotate. If selector is pushed upward, across feed will be obtained.

C. Thread Cutting Operation

The direction of thread cutting is controlled by feed director (P6, No.1) by operation feed selector handle (P6, No.12) and feed/thread selector handle (No.13) according to thread pitch, the leadscrew rotate. Operate downward the thread cutting engagement lever (No. 19). it should be engaged with leadscrew, thus the longitudinal travel of thread cutting feed.

LATHE ALIGNMENT

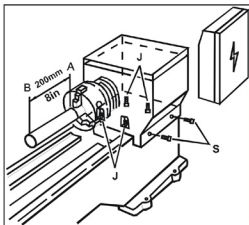
When the lathe is installed and ready for use, it is recommended to check the machine alignment before commencing work.

Alignment and leveling should be checked regularly to insure continued accuracy.

Adopt this procedure as follow:

Take a steel bar with a diameter of appr. 50mm(2") and a length appr. 200mm(8"). Span it in the chuck without using the center. Then cut off a chip over a length of 150mm(6") and measure the difference at A and B.

In order to correct a possible difference, loosen the screw(j) clamping the headstock on the bed. Adjust the headstock with set screw(s), repeat the above procedure until all measurings is correct. The lathe will be cutting correctly.



CROSS SLIDE AND COMPOUND REST

The graduation on the handwheel is in mm&inch. The dovetail can be adjusted play with gib-strips. Make sure the dovetails are thoroughly clean. Grease before adjusting them.

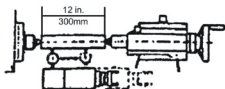
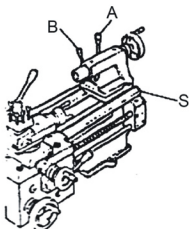
The adjustment procedure is as follows:

First loosen the rear set screw. Turn the front one until the slide moves smoothly without backlash. Then tighten the rear set screw. Provision is made for the elimination of backlash in the cross slide nut, take off the dust plate mounting on the rear face of the carriage groove. Turn the cross traverse handle wheel to move the cross feed nut until it get to the end edge of the feed leadscrew. Turn the socket screw clockwise as required. A 45 degree turning of the socket screw eliminate appr. 0.125 mm(0.005") backlash. Check from time to time until the cross slide moves smoothly.

TAILSTOCK

The tailstock can be moved freely on the bed and fastened at any position by locking lever A. The tailstock quill can be fastened with lever B. For precise adjustment the tailstock can be adjusted crosswise, Slacken lever A and adjust the tailstock with set screw(s) on both sides of the tailstock body.

Place a ground steel bar with a length of appr. 300mm(12") between the centers and measure with the measuring device mounted on the support, whether the distance on both sides of the bar is the same.

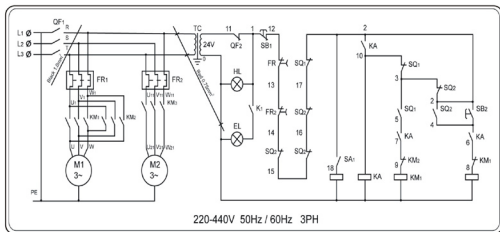


ELECTRIC SYSTEM

Connect power cable to the junction box. Make sure that the voltage and frequency used are consistent with those indicated on the machine name plate.

Connect the power cable to the shop mains switch and make the machine grounded, then install the fuse wires.

Viewed from pulley side, the main motor must run clockwise (that is, viewed from tailstock side, the spindle must run counterclockwise). If not, just exchange two power lines of the three.

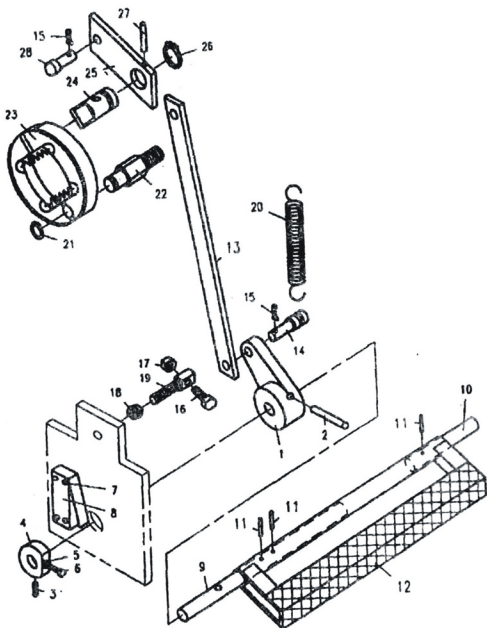


BILL OF ELECTRIC APPARATUS

CODE NAME	DESCRIPTION	MODEL AND TECHNICAL DATA
M1	Main motor	Y90S-4, 3-400V/50Hz, 1.5KW
M2	Coolant pump motor	AB-12, 3-400V/50Hz, 40W
KM1	A.C. contactor	3 TB41
KM2	A.C. contactor	3 TB41
KM3	A.C. contactor	3 TB41
KAL	Relay	3 TH80
EL	Machine lamp	JCH1-1
SB1	Button	LA38120913
SB2	Button	LA38-11/209
SA1	Button	LAY3-11X/2
HL	Indicator light	AD11/21-8GZ
Sq1	Limit switch	LXW5-11G2/L
SQ2	Limit switch	LXW5-11G2/L
SQ3	Limit switch	LXW5-11G2/L
SQ4	Limit switch	LXW5-M/L
SQ5	Limit switch	LXW5-M/L
SQ6	Limit switch	LXW5-M/L
TC	Transformer	JBK5-63VA-TH
QF1	Mains switch	JCH 13
QF2	Breakpoint switch	DZ47-60 C2
FR1	Relay	3UA59
Fr2	Relay	3UA59

DIRECTIONS FOR INSTALLATION OF OT330B LATHE FOOT BRAKE

(Separated Packing)



1. Loosen Screw 3, remove Part 4, take out Pin 2, dismount Part1. Put Part 9 (along with Part 12 into right side hole of the big bed stand. Mount Part 1. Put It through Bed Stand Supporting Plate Mount Part 4. Move the small bed stand to the right end of Part 10. Mount the connecting axle Into the small bed stand.
2. Put the chip pan on the right and left bed stands. Make 6 holes align that of the bed stands, the bed the and other upper parts. Tighten screws 5–M12.Open the big stand left cover, connect the bed and stand with a M16X45 hex bolt from inside the stand to the tapped hole of the bed, then tighten. Make sure to put the white wire cord through the big hole of the chip pan to the big bed stand supporting plate. Fix Part 8 (Stroke Switch).
3. Put part 14 into Fork 1, fix it with split Pin 15.
4. Put on the tensile returning spring between Part 14 and the pulling hole of the big bed stand. Use bolt 16 to adjust the position of Fork 1.
5. Connect pulling Bar 13 to Part 14, lock it with the split pin. Connect the other end to Part 28 and lock it with Split Pin 15.
6. Adjust the position of Hitting Pin Support 4 so that when the pedal is depressed Part 6 contact the spring plate of Stroke Switch 8. Use Set Screw 3 to lock Hitting Pin Support 4.



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