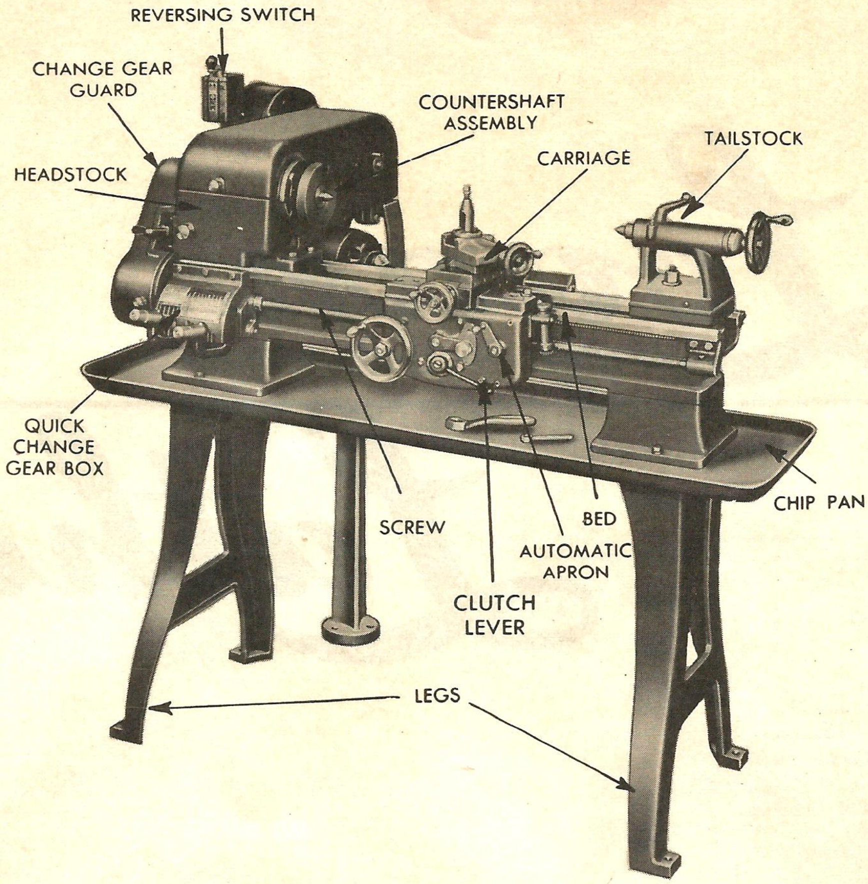
Logan Lathe

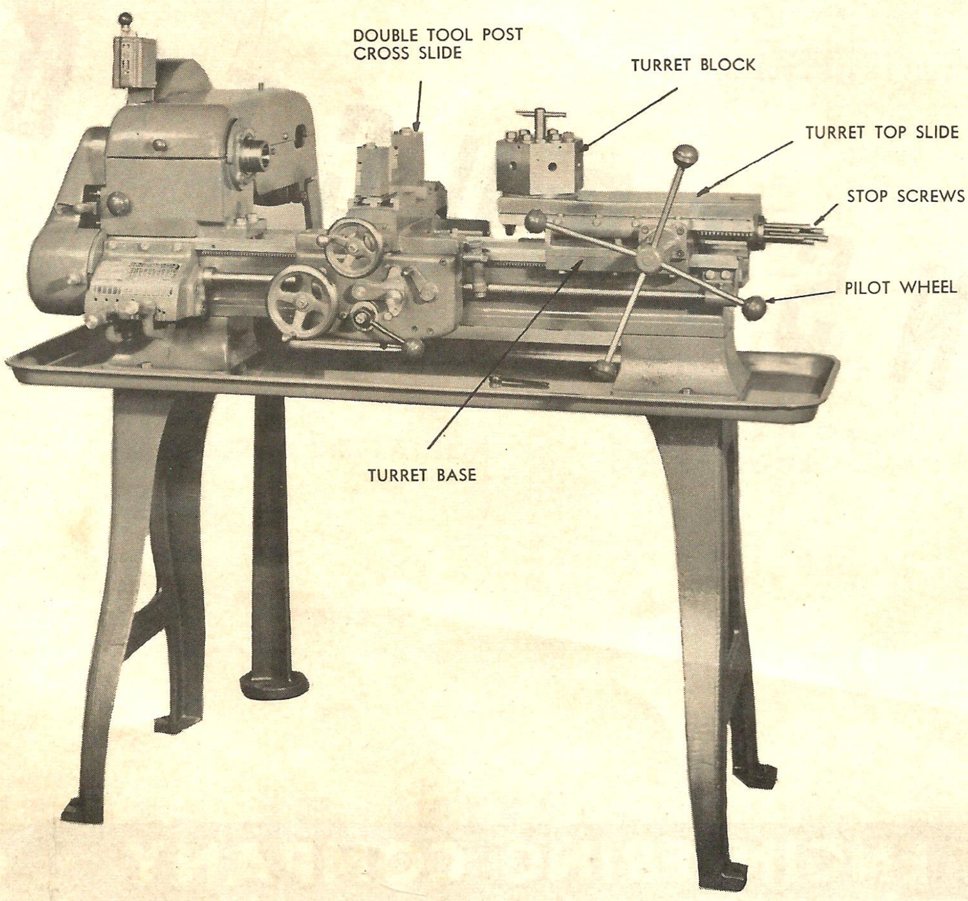
INSTRUCTIONS

LOGAN ENGINEERING COMPANY • Chicago, Ill.

1800 Series Floor and Bench Models



SCREW CUTTING LATHE MODEL 1820



TURRET LATHE MODEL 1840-2

FIGURE 1

LOGAN LATHES

The cases in which your Logan Screw Cutting Quick Change Gear Floor Model Lathe is delivered contains the following:

1 Logan Lathe with headstock, tailstock, and carriage mounted on the lathe bed.
1 2-step V type motor pulley (screwed to base of lathe crate)
1 Bag (attached to countershaft assembly) containing:
  1 tool post
  1 tool post ring
  1 tool post screw
  1 tool post wedge
  1 tool post block
  1 tool post wrench
  1 tailstock wrench
  2 60° centers
  1 Morse Taper Adapter #3-#2
  1 knob and quill
1 Countershaft assembly—floor type
1 V Belt (attached to countershaft)
1 Six conductor cable (in bag attached to headstock)
1 Instruction book
1 Parts List (inside the change gear guard)
1 Chip pan
1 Set of floor legs
1 Countershaft support pedestal

For the Bench Model Lathe the chip pan and floor legs and countershaft support pedestal are omitted.

The cases in which your Logan Turret Quick Change Gear Floor Model Lathe is delivered contain the following:

1 Logan Turret Lathe
4 Wedges for double tool post cross slide
5 Jam nuts
1 Stop screw for cross slide
1 Allen wrench for tool post
1 Allen wrench for turret
1 Countershaft assembly—floor type
1 V Belt (attached to countershaft)
1 Six conductor cable (in bag attached to headstock)
1 Instruction book
1 Parts List (inside the change gear guard)
1 Chip pan
1 Set of floor legs
1 Countershaft support pedestal

If turret is lever operated model you will find:

1 Cover for turret block opening

For the Bench Model Lathe the chip pan and floor legs and countershaft support pedestal are omitted.

Unpack carefully and check to be certain that you have removed all the pieces. After removing the lathe from its shipping case, clean it thoroughly with a stiff brush and kerosene. Then cover all the unpainted surfaces with a film of good machine oil to prevent rusting. These surfaces should be covered with a film of oil at all times and the lathe should be covered with canvas when not in use.

Setting Up the Lathe

FLOOR MODEL. Mount the lathe on the chip pan and the floor legs, using the bolts furnished, and attach the countershaft assembly to the rear of the headstock as shown in Fig. 2. When mounting the lathe on the pan and legs, notice that the holes in the pan are not drilled an equal distance from the front and back of the pan. The short side is to be mounted towards the back of the lathe to keep the pan from interfering with the motor. Locate the lathe on a **solid level floor**, preferably concrete, in a dry well lighted location, using lag screws or bolts to fasten the legs to the floor. If the lathe is set on a concrete floor, mark the location of the bolt holes and drill in the concrete with a star drill setting the lag screws or bolts in expansion shields or in melted lead.

It is of the greatest importance that the lathe be level; if it is not, its weight will cause the lathe bed to be twisted, throwing the lathe out of true. It is impossible to do accurate work on a lathe that is not level and the lathe will be damaged beyond repair.

When the lathe is in position, place a sensitive machinist's level on top of the lathe bed and adjust any variation from level by placing thin shims under the feet. Be certain the lathe is level across the ways and parallel to them, both at the headstock and tailstock ends. When the lathe is level bolt down tightly and check the leveling. It may be necessary to loosen the bolts and add more shims. Remember the lathe **must be level** if it is to perform accurately.

BENCH MODEL. Attach the countershaft assembly and place the lathe in position on the bench. The bench for the lathe should be 31 to 33 inches high of heavy construction and suitably reinforced for steadiness and should have a top of seasoned wood at least two inches thick. We suggest that the top either be doweled or that 4 or 5 steel rods with end nuts be run crosswise through the top and the nuts turned tight, pulling the boards together. Plane the bench top level and place the lathe upon it. Mark and drill four ⅜-inch holes under the corresponding holes in the legs at each end of the lathe. Through these holes place four machine bolts to fasten the lathe to the bench and to aid in leveling. Then proceed to level the lathe bed with shims as described above for the floor model.

Mounting the Motor

The 10" Logan Lathe is designed to be powered by a 1750 RPM motor of ½ H.P. When the lathe is in place mount the motor on the motor bracket beneath the countershaft. Do not tighten bolts until the motor position has been adjusted.

To adjust the motor position, align motor pulley and the 10-inch pulley on the countershaft by moving the motor until the two are in line. Tighten the base bolts, but do not place the belt on the pulley until the motor wires have been connected and the motor pulley tested for direction of rotation.

Connect the drum reversing switch mounted on the countershaft with the motor, using rubber covered 6 conductor cable in accordance with the wiring diagram pasted on the inside of the switch cover. Motors furnished by Logan have a wiring diagram packed with the motor to assist in making the proper connections. Connect the motor to the current source. The motor pulley should then rotate clockwise, viewed from the motor pulley end, when the switch is in the forward position. Combined switch and motor wiring diagrams are shown on the last page of this booklet for use with the motors we furnish. We recommend the use of a good three phase motor that is electrically balanced and will not transmit vibration through the belts to the headstock, causing chatter. Split phase motors are not recommended, especially where fine work is required.

Adjusting the Belts

The belt from the motor to the countershaft and the one from the countershaft to the lathe are easily adjusted for tension. Neither of these belts should be too tight, the tension depending on the load. Excessive belt pressure will shorten the life of the belt, place a strain on the bearings and cause a loss of power through excessive friction. When adjusted for normal work a moderate pressure on the middle of either belt should depress it about 1½ inches.

The motor bracket is hinged at one side with a bolt and nut adjustment that raises or lowers it, thereby decreasing or increasing the tension on the V belt. The V belt rides in a V groove of the two step motor pulley and on a flat face of the two step countershaft pulley.

When the pulley guard is raised, the countershaft automatically moves toward the headstock, thereby releasing the tension on the V-belt. With the tension released, the belt may be easily changed from one step to another. When the pulley guard is closed the belt is automatically brought into tension again, the amount of tension being regulated by a slotted head screw located at the rear of the pulley guard. Turning the screw to the right increases the belt tension; to the left decreases it.

The Ball Bearing Countershaft

The countershaft assembly of the Logan Lathe is a patented development that is a distinct improvement over previous design. This special unit assembly is carried by two hinged pins attached to a bracket in the headstock and by a pedestal rod to the floor or the bench giving three point suspension. To prevent vibration being transmitted to the lathe, the entire assembly is insulated by rubber at all points of contact. The pedestal rod rests on a rubber foot, the two hinge pins are rubber cushioned and the pulley guard rests on rubber buttons. Provision is made to adjust belt tension

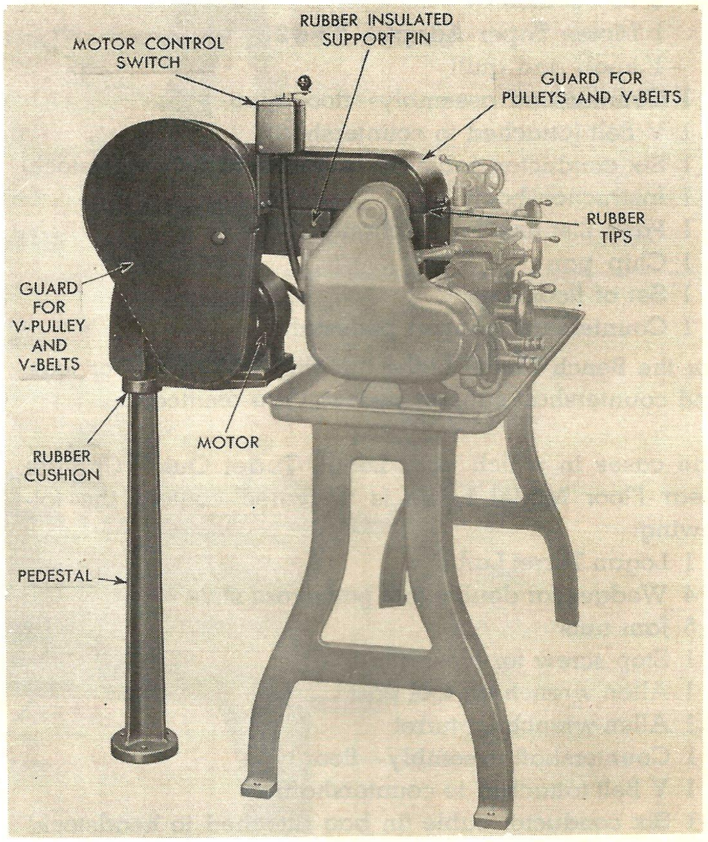


FIGURE 2—END VIEW OF COUNTERSHAFT ASSEMBLY

easily. An adjustable motor mounting bracket is included in the assembly. All pulleys and belts are completely guarded, yet easily accessible. A patented tension release operates automatically when the cover for the V-pulleys is raised to permit quickly changing the V-belt from one step to another. And finally, the entire assembly is designed to appear as a streamlined part of the lathe.

Fig. 2 above illustrates the floor model lathe and countershaft assembly in position. The bench model uses the same countershaft design adapted for bench use.

The Headstock

The headstock of the Logan Lathe is made of high grade gray iron and is totally enclosed. It contains the headstock spindle and bearings, the bull gear, the V-pulley and the back gears. The V-pulley is turned by the belt from the countershaft, and thereby turns the bull gear, or transmits its power through the back gears to the bull gear if lower speed or greater power are desired.

Alloy steel has been used in making the spindle, which has been machined and ground to a fine finish. The nose is 1½-in. diam. with 8-pitch National Form threads and has been turned internally to a No. 3 Morse Taper.

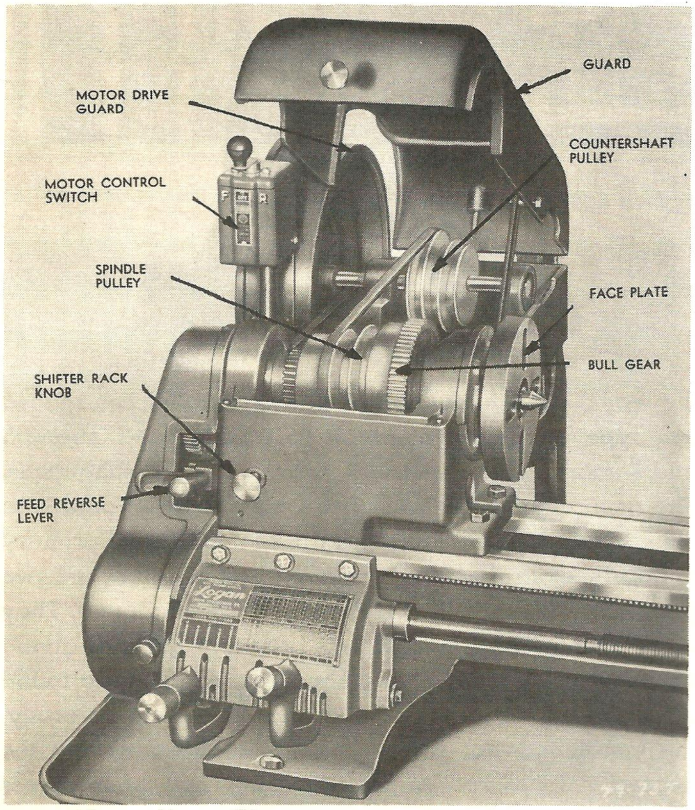


FIGURE 3—HEADSTOCK AND CONTERSHAFT

A reducing sleeve permits the use of a No. 2 Morse Taper Center. The 25/32-in. hole permits work as large as ¾-in. to be fed through the spindle. A draw-in collet attachment taking collets up to ½-inch capacity can be used through the hollow spindle.

The spindle is mounted on three rows of pre-loaded precision ball bearings which are sealed in grease. The use of ball bearings in the headstock to mount the spindle is advanced design that, although more expensive, gives finer results. Ball bearings are the ideal friction reducing bearings. Technical advances in ball bearing manufacture make it possible now to obtain special pre-loaded ball bearings of extreme precision that will carry the loads for which they are designed with less wear, greater accuracy and with no adjustment required.

The three-step V-pulley and the pinion gear are fastened together rigidly and revolve freely on the spindle. For direct drive, the pulley is locked to the large bull gear which is keyed to the spindle. This is accomplished by means of a plunger-type lock located on the side of the bull gear. When this lock is "in" the pulley turns the bull gear with it; when "out" the pulley and the pinion gear turn free of the bull gear.

Should it ever be necessary to remove the headstock spindle the following procedure should be followed and the parts list would be of assistance.

First, remove the take-up nut, the spindle gear, Woodruff key, collar, and bearing grease seal in the order named from the left hand end of the spindle.

Second, remove the four fillister head screws from the bearing cap, then the bearing cap and next the grease seal from the right hand end of the spindle.

Third, loosen the set screws in the bull gear and carefully drive the spindle with a wooden mallet toward the tailstock end of the lathe, being careful to hold the bull gear and pulley parts as the spindle is removed so they will not drop.

Ball bearings can be ruined by improper handling. When pressing a bearing into or out of the seat, pressure should be applied to the outer race only, but when pressed on to or off of shaft, pressure should be applied on the inner race only. Bearings should be carefully kept **free of dirt and grit** and except in extreme cases should not be tapped into place with a hammer.

The Back Gears

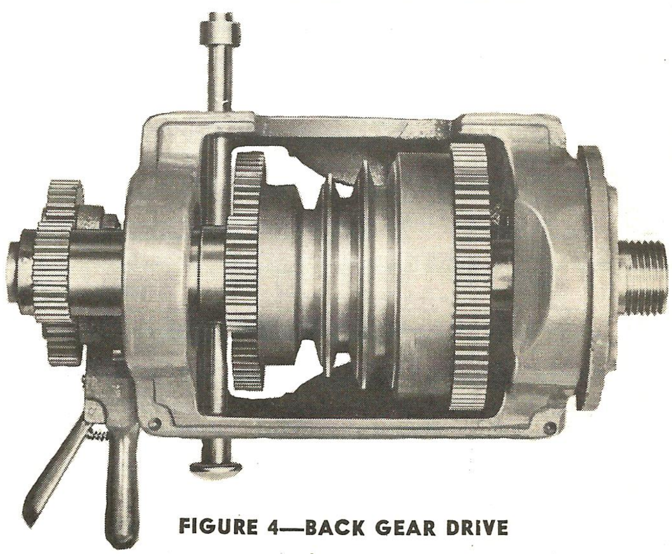


FIGURE 4—BACK GEAR DRIVE

The back gear mechanism on the Logan Lathe is enclosed in the headstock instead of being located in an exposed position as in the usual construction. Also, instead of having to reach over the top of the headstock to throw a back gear lever, the Logan design permits controlling the back gear by a knob on the front of the headstock. The back gear is mounted on a quill which turns on self-lubricating bronze bearings on an eccentric shaft. The knob operates a rack engaging a pinion which rotates the eccentric shaft, thereby swinging the back gears into mesh. When the knob is pulled out, the back gears are engaged and are locked in position by a pawl just back of the knob. The lock is released by pressing the pawl with the finger.

The pulley and small gear turn freely on the spindle and are locked to the bull gear for direct drive by a lock pin located in the side of the bull gear. When slower turning speed or greater power than could be obtained from a direct drive is required, the back gears are used. To engage the back gear drive first pull out the direct drive lock pin so that the pulley and small gear turn free of the bull gear. Then engage the back gears so that the power is transmitted through the pulley and small spindle gear to the large back gear, and from the small back gear to the bull gear. The bull gear, being keyed to the lathe spindle, turns the spindle.

Important

Never engage back gears while lathe is in operation. This is the most common cause of stripped gears.

Spindle Speeds

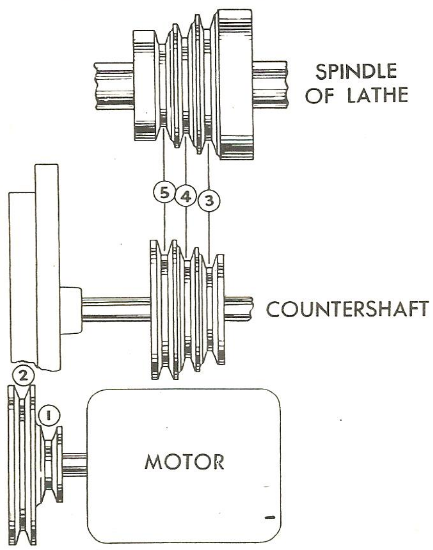


FIGURE 5—BELT DRIVE DIAGRAM

The following table shows the spindle speeds which can be obtained using the various belt positions shown in Fig. 5, both with direct drive and with the back gear drive.

Motor Belt Position	Spindle Belt Position: Back Gear Drive			Direct Belt Drive		
	3	4	5	3	4	5
1	55	70	90	330	425	550
2	145	185	240	880	1100	1430

The Lathe Bed

The bed of the Logan Lathe is an extra heavy one-piece casting of hard iron containing the correct proportion of steel and alloys to give the maximum in wear and to withstand all strains. Extra width (6-15/16" across

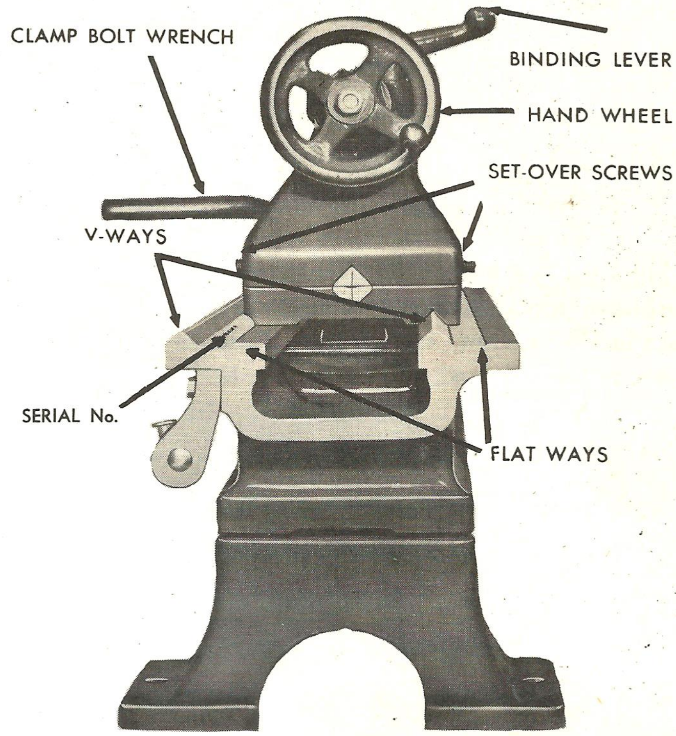


FIGURE 6—LATHE BED AND TAILSTOCK

the ways) extra heavy walls, heavier and closer spaced box type cross ribs combine to give greater strength and a more solid foundation for the lathe mechanisms. The accuracy of the lathe bed and the ways on which the carriage and the tailstock are mounted is of primary importance. To insure extreme accuracy in the bed two prismatic V-ways and two flat ways are employed. They have been planed, milled and precision ground, giving an accurate, heavy, well ribbed bed of the type found on large engine lathes. In order to retain this accuracy, the instructions for setting up the lathe emphasize the necessity for carefully levelling the bed both across and parallel to the ways.

With proper care and normal use there will be no appreciable wear on the bed or ways of a level lathe, but the surface may be damaged by a lack of oil or by abrasion. Be careful not to drop tools or work on the ways. Keep them well oiled when not in use, wiping them off and re-oiling before continuing work and, if possible, keeping them covered during filing or grinding operations.

Flame hardened beds are identified by red paint at right end. Serial number of flame hardened bed is stamped between bed rack and right hand lead screw bracket on ground surface front side of lathe bed.

SCREW CUTTING AND TURRET LATHES

Logan

LOGAN ENGINEERING CO.
CHICAGO, ILL. U. S. A.

MODEL NO.

LEVER POSITIONS

A B C D E

STUD GEAR	LEFT HAND LEVER	THREADS PER INCH							
72	A	4	4½	5	5½	5¾	6	6½	7
36	A	8	9	10	11	11½	12	13	14
36	B	16	18	20	22	23	24	26	28
36	C	32	36	40	44	46	48	52	56
36	D	64	72	80	88	92	96	104	112
36	E	128	144	160	176	184	192	208	224
		LONGITUDINAL TURNING FEEDS							
72	A	.1000	.0888	.0800	.0728	.0696	.0666	.0616	.0572
36	A	.0500	.0444	.0400	.0364	.0348	.0333	.0308	.0286
36	B	.0250	.0222	.0200	.0182	.0174	.0166	.0154	.0143
36	C	.0125	.0111	.0100	.0091	.0087	.0083	.0077	.0072
36	D	.0062	.0055	.0050	.0045	.0043	.0041	.0038	.0036
36	E	.0031	.0027	.0025	.0023	.0021	.0020	.0019	.0018

AUTOMATIC CROSS FEED .25 TIMES LONGITUDINAL FEEDS

FIGURE 7—THREAD AND FEED CHART ON LOGAN QUICK CHANGE GEAR LATHES

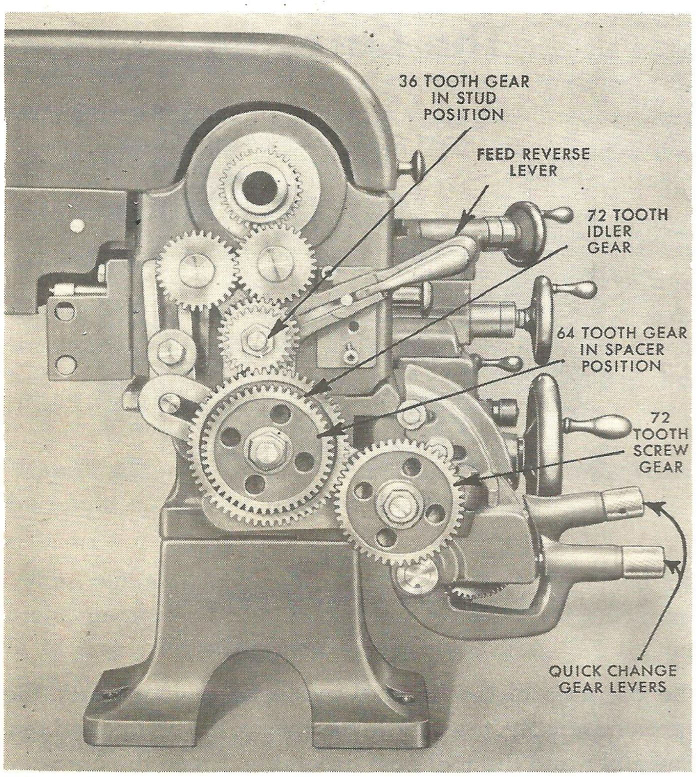


FIGURE 8—CHANGE GEAR TRAIN ON LOGAN QUICK CHANGE GEAR LATHE

Power Feeds

The left end of the headstock spindle is fitted with a gear for the transmission of spindle power through a gear train and through the quick change gear box to the lead screw along the front of the lathe which is used in power feeding. The rate of feed is dependent upon the speed of the lead screw.

It is necessary in operations such as thread cutting to set the rate of feed in a definite relationship to the speed of the spindle. This is done by the selection of gear sizes in the gear train together with the setting of the levers on the quick change gear box.

It is possible to obtain 48 different threads or feeds in either direction on the Logan Quick Change Gear Lathe. For threads from 8 to 224 per inch, inclusive, the change gear train is set up as in Fig. 8, using the 36 tooth stud gear. A 64 tooth gear is mounted in an inactive position spacer position with the idler gear. For threads from 4 to 7 per inch move 72 tooth idler gear to stud gear position. Place the inactive 64 tooth gear in idler position and put the 36 tooth stud gear you had removed in the inactive position.

All other adjustment for the various thread or feed requirements is made by the two levers on the quick change gear box. Fig. 7 shows a reproduction of the thread and feed chart mounted on the gear box. As an example, assume that the 36 tooth stud gear is engaged in the change gear train (with the 64 tooth stud gear being used as a spacer) and that it is required to cut 18 threads per inch. Locate 18 on the gear chart. Set the left hand lever in position "B" as indicated and set the right hand lever directly under the column in which 18 appears. Similarly, if a longitudinal feed of .0045 inches per revolution of the spindle is required, set the left hand lever in position "D" and the right hand lever under the column in which .0045 appears.

Power cross feeds are .25 times the chart figures shown for power longitudinal feed.

The feed reversing lever, which extends from the gear train housing has three positions—Up, Down, and Center.

Important

Never shift feed reverse lever while lathe is in operation. This is the most common cause of stripped gears. When in the center position the two gears on the end of the lever, which turn on bronze bearings, are free of the gear train and all power feeds are disconnected.

When "Up," the lead screw turns to move the longitudinal or cross feeds in one direction. When "Down," the longitudinal or cross feeds are in the opposite direction.

The alloy steel lead screw which runs along the front of the lathe bed has an Acme thread accurately cut with a pitch of ⅛ inch (8 threads to an inch) and is mounted at each end in a bearing. Clean and oil the lead screw frequently to maintain its accuracy.

The Tailstock

The tailstock slides on a V and flat way of the bed as illustrated in Fig. 6. It is locked in position along the bed by tightening the clamp bolt with the clamp bolt wrench furnished with the lathe.

The tailstock spindle is controlled by the tailstock hand wheel. Turning the wheel in a clockwise direction brings the spindle out of the tailstock. The spindle is of special steel with a ground finish and has been reamed for a No. 2 Morse Taper Center, which may be ejected by turning the tailstock wheel in a counter clockwise direction until the spindle reaches the end of its travel.

The spindle is graduated up to 2½ inches in sixteenth inch graduations for accuracy in boring and drilling. Lock spindle in place by turning the binding lever to the right. A cup and quill are mounted on the top of the tailstock. Fill with a heavy grease or a mixture of white lead and machine oil to be used to lubricate the centers when work is mounted between them.

The tailstock may be set-over 11/16 inch for turning tapers by loosening the tailstock clamp nut and adjusting the headless set screws located on either side. To align the tailstock again the index line on the tail stock and tailstock base will indicate the approximate posiion. To obtain the exact position it is necessary to place a 12 or 15 inch check bar between centers. Take a light cut, then check the diameter at each end of the bar with a micrometer. If there is a variation adjust the set-over screws until the diameters at each end are the same after a cut.

Lathe Centers

The headstock spindle is machined to take a No. 3 Morse Taper and is furnished with an adapter for a No. 2 Morse Taper Center. The tailstock is fitted for a No. 2 Morse Taper Center.

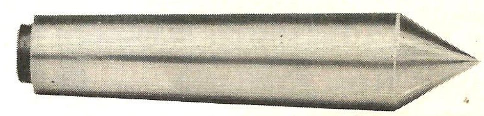


FIGURE 9—60 DEGREE CENTER

While the tailstock spindle should be kept oiled on the outside, the interior should be dry and clean. Before placing either of the centers in the lathe, they and the tapers into which they fit should be wiped free of oil and dirt, for the presence of a bit of dirt or a slight film of oil will interfere with the accuracy.

The Carriage

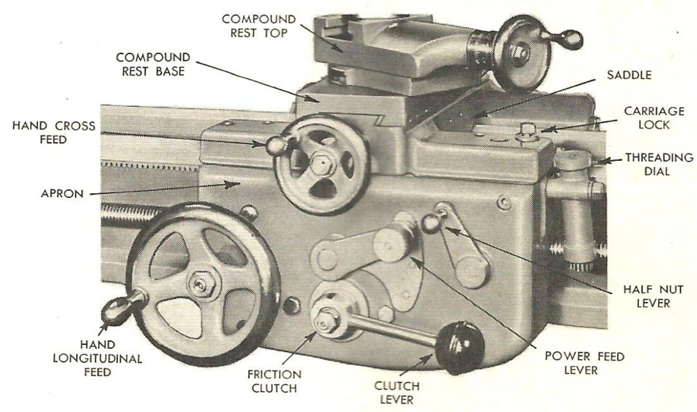


FIGURE 10—CARRIAGE

The carriage of the lathe is made up of four parts, the apron assembly, the saddle assembly, the compound rest assembly and the tool post assembly. Since the carriage supports the cutting tool and controls its action it is an important unit.

APRON. The double walled apron which is suspended from the front of the saddle contains the power feed mechanism, the longitudinal hand feed, half nut lever and the threading dial is attached to it.

The large hand feed wheel on the front of the apron moves the carriage along the ways by means of gears which engage a rack on the underside of the front way.

The power feed lever is located in the center of the bed of the apron and can be set in three positions. When "Up," the apron mechanism is set for power longitudinal feed; when "Down," for power cross feed, and when in the central position, is in neutral.

FRICTION CLUTCH. The friction clutch of this lathe is spring loaded to help prevent gear breakage due to overload of carriage feed. To engage the power after having set the power feed lever in the required position the clutch lever located immediately below is lifted to "Up" position to engage feed. Similarly, the lever is pushed to "Down" position to disengage feed. Caution should be exercised as the travel between engaged and disengaged position is only about 20°. The tension on the clutch can be easily adjusted by tightening the inner nut of the two nuts at the front of the clutch assembly. The outer nut is used as a lock nut and make certain that it is not mated with the inner nut but acts as a lock nut.

In thread cutting, the half nuts are used for longitudinal feed. The half nut lever is located at the right side of the apron. The half nuts can only be engaged when the power feed lever is in the neutral position, and also the power feed lever cannot be engaged while the half nuts are engaged.

Power is fed through the friction drive from the spline in the lead screw, whereas the half nuts drive from the lead screw thread. To minimize wear and thereby retain the accuracy of the half nuts and lead screw, they should only be used for thread cutting.

THREADING DIAL on the right end of the apron indicates the proper position in which to engage the half-nut lever during threading operations so that the tool will enter the same groove for each cut, thereby eliminating the need for reversing the drive at the end of each cut. (Fig. 11 Threading Dial.)

When cutting even numbered threads, the half nuts may be engaged at any point on the threading dial.

When cutting odd-numbered threads (5, 7, 9, 11, etc. per inch), engage the half-nut lever when the outer mark is in line with either the mark numbered "1" or that numbered "2."

When cutting half-numbered threads (4½, 5½, 6½, 11½, etc.), engage the half-nut lever at the same point on the dial for each cut.

THE SADDLE, which moves longitudinally on the front V-way and the back flat way, has been machined from a semi-steel casting, and is held down to the bed by gibs which bear on the underside of the front and back ways. These gibs are adjustable and should be set just tight enough to give a firm sliding fit between the carriage and the bed ways.

The compound rest base moves across the top of the saddle on dovetailed ways to form the cross slide. The hand cross feed is operated by a hand wheel at the end of the cross feed slide. This slide is equipped with a gib which may be tightened by adjustment of the set screws on the outside of the slide. The cross feed gib should fit snugly and should be adjusted whenever play develops. The cross slide is moved by an Acme threaded screw mounted in self lubricating bronze bearings. The hand wheel of the cross feed is of polished steel with a collar which is calibrated in thousandths of an inch for measurement of feed when a definite cut is to be taken.

COMPOUND REST is mounted on top of the cross-slide on a base calibrated in degrees from 0° to 90° in both directions. Two bolts, one on each side of the rest, hold the base in position, and by loosening these bolts the rest may be swivelled to the desired angle. Two self-lubricating bronze bearings are mounted in the bushings of the rest which is moved over the slides by an Acme threaded screw. The slide is dovetailed with gib take-up for wear.

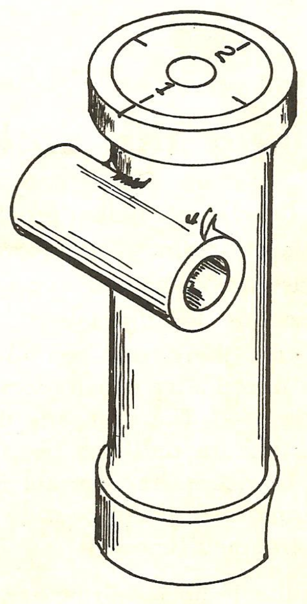


FIGURE 11—THREADING DIAL

The compound rest motion is controlled from a hand wheel with a collar which is calibrated for measurement in thousandths of an inch.

TOOL POST fits into a T slot in the compound rest and holds the tool holder by means of a square head screw.

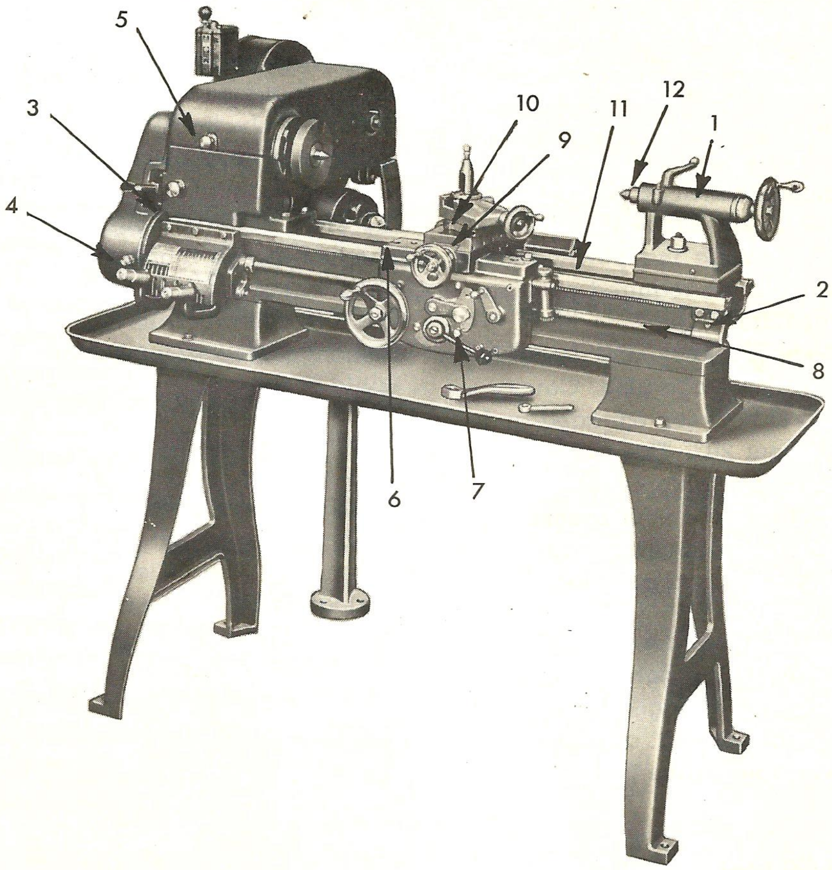


FIGURE 12—OILING DIAGRAM

Oiling the Lathe

The design of the Logan Lathe provides for correct lubrication with a minimum of attention. The ball bearings in the headstock are sealed in grease and require no further lubrication for the life of the bearing. At 28 separate points there are self-lubricating bronze bearings, where in ordinary construction plain bearings with oil holes are used. The bronze in these bearings is of an absorbent texture and has been thoroughly impregnated with lubricant. The correct film of lubricant is constantly maintained at the bearing surface without the necessity of frequent renewal.

Those points in the lathe requiring regular lubrication should be gone over every time the lathe is used and in a definite order so that no parts will be missed. Use a good machine oil no heavier than SAE No. 10, wiping away excess oil that would cause dirt to adhere to the lathe. Do not attempt to oil the lathe while it is running.

Using a long-spouted can, oil the following points each time the lathe is used:

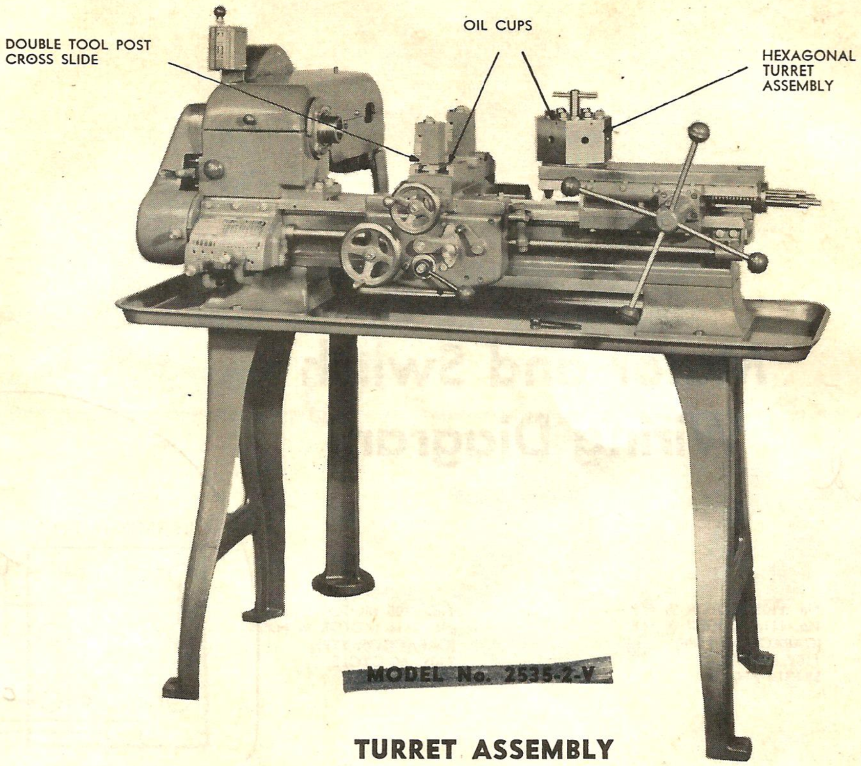
1. The spring well on top of the tailstock.
2. One oil cup on top of the bearing at right end of the lead screw.
3. The feed reverse lever. (A hole has been drilled in the base of the lever to receive oil.)
4. The bearings on each of the change gears.
5. The spindle pulley. (Remove the headless set screw on the second step of the pulley and oil freely before using the back gears.)
6. Remove set screw and fill this oil well so that when petcock set screw (7) is removed, oil just drips out.

Keep the following surfaces clean, free of chips and covered with a film of oil:

8. The lead screw.
9. The cross slide.
10. The compound slide.
11. The lathe bed ways, both V and flat.
12. The outside of the tailstock ram.

Spindle taper area.

A small amount of graphite grease should be kept on the teeth of all gears in the headstock, the apron and on the teeth of the rack on the underside of the front way.



TURRET ASSEMBLY

The turret assembly furnished may be the lever operated model or the pilot wheel model. The assembly has two principle components, the turret base assembly and the turret slide assembly.

The turret base assembly mounts on the outer bedways utilizing the full width of the bed for rigidity and full length gibs from underside of bed are used to lock base at any point along the length of the bed to avoid distortion. This construction is similar to those used on heavy duty turret lathes.

The turret slide assembly has dovetailed ways with adjustable gibs. Keep front gib screws properly adjusted to keep slide movement snug for best results. Holes in turret block have been bored from the spindle of the lathe. Pilot wheel models are furnished with a locking post and handle for turret block and should be locked after turret block has been indexed to required station to increase rigidity on heavy cuts. Lever operated models do not have this lock but are supplied with a cover for the opening in the center of the turret block. Should it become necessary to tighten the turret block adjust the two nuts in the well of the turret block. Adjustable stop screws, at rear of slide, for each turret block station are furnished and are locked in position by a socket head set screw with slug under it to avoid distorting the threads. Normal care of keeping the assembly clean, and free of chips will give the results expected.

DOUBLE TOOL POST CROSS SLIDE

Turret lathe models are equipped with a double tool post cross slide in place of the compound rest assembly. The gib screws on the side are used to set the adjustable gib. The adjustable stop screw at the back of the slide can be pre-set to control cross slide travel. Adjustable double tool posts having openings 7/16" x 1-9/16" and adjustable wedges are included. The cross feed screw can be hand or power operated having a large dial graduated in thousandths of an inch. Where faster cross slide movement and power longitudinal feeds are desired the cross slide can be equipped with the added lever operation. Order the lever attachment AC-303 and instructions for its installation will be furnished.

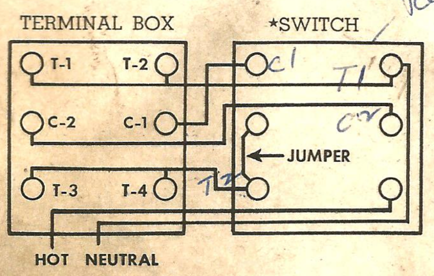
LUBRICATION INSTRUCTIONS

In addition to following the lubrication instructions on page 10 of the Instruction Manual, lubricate the two oil cups which appear on top of the cross side and the single oil cup located on the head of the turret.

ECONOMICAL CONVERSIONS

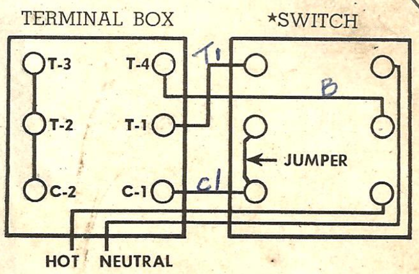
The design and construction of Logan lathes makes it economical and simple to convert a lathe from a turret lathe to a screw cutting model by ordering the compound rest assembly and the tailstock assembly as listed in our catalog. The purchase of a turret assembly and double tool post cross slide will convert your screw cutting model to a turret lathe.

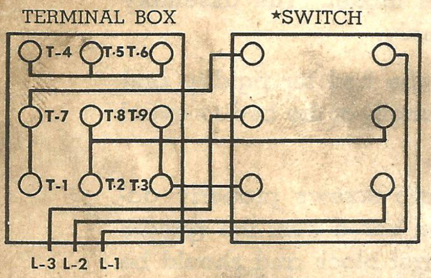
Motor and Switch Wiring Diagram



No. 1105 MOTOR ½ H.P.
No. 1116 MOTOR ¾ H.P.
(CAPACITOR TYPE)
115V. 60 CYCLE
SINGLE PHASE

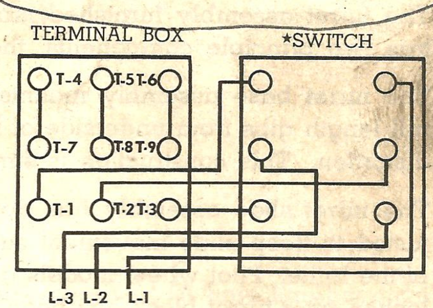
No. 1105 MOTOR ½ H.P.
No. 1116 MOTOR ¾ H.P.
(CAPACITOR TYPE)
230V. 60 CYCLE
SINGLE PHASE

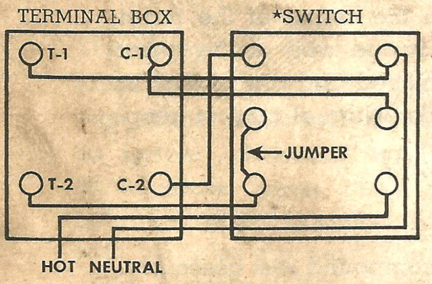




No. 1110 MOTOR ½ H.P.
No. 1118 MOTOR ¾ H.P.
220V. 60 CYCLE
THREE PHASE

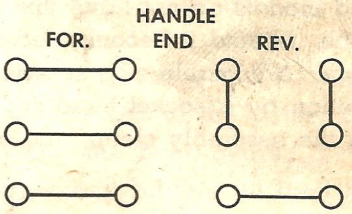
No. 1110 MOTOR ½ H.P.
No. 1118 MOTOR ¾ H.P.
440V. 60 CYCLE
THREE PHASE





No. 1100 MOTOR ⅓ H.P.
(CAPACITOR TYPE)
115V. 60 CYCLE
SINGLE PHASE

INTERNAL CONNECTIONS FOR SWITCH R-1143-A R-2532



NO. 0636 SWITCH (R-1143-A) BENCH AND FLOOR MODEL LATHES

NO. 0382 SWITCH (R-2532) CABINET MODELS

★ UPPER END OF DIAGRAM IS HANDLE END OF SWITCH

FIGURE 13

LOGAN ENGINEERING CO.

Lawrence and Lamon Avenues, Chicago 30, Illinois

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Litho in U.S.A.