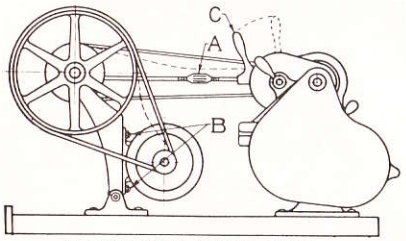
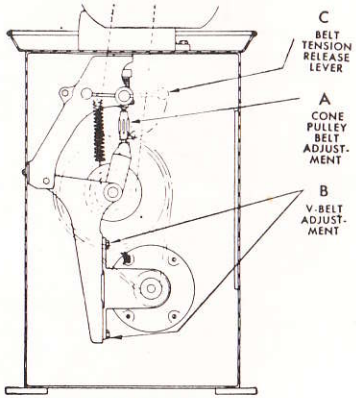
BELT CARE AND MAINTENANCE
SUGGESTIONS

1. Keep flat belt clean. Remember, belts wear out. They cost little. Use the recommended Flat Belt and replace as frequently as necessary.
2. Maintain proper belt tension.
3. Do not run Lathe with too much tension on belt. This may result in loss of power, excessive bearing wear, causes motor to run hot, and abnormal stretching of flat belt.
4. Release belt tension lever, taking strain off belt when Lathe is not operating.
5. Routine checking and adjustment of the belt tension, according to instructions, will keep Lathe efficiency high and repair expenses low.
6. When ultimate of belt tension adjustment has been reached, replace with new Flat Belt. Order the correct belt from your nearest South Bend Distributor or direct from our factory.

BELT ADJUSTMENTS



HORIZONTAL DRIVE LATHE



CROSS SECTION OF UNDERNEATH BELT MOTOR DRIVE SHOWING CONE PULLEY BELT AND V-BELT

CONE PULLEY BELT—Belt tension release lever "C" permits releasing cone pulley belt tension for shifting belt to change spindle speeds. Turnbuckle "A" adjusts tension of the cone pulley flat belt. This adjustment must be made with lever "C" in running position.

MOTOR V-BELT–Screw "B" adjusts tension of the motor V-belts. Loosen all four bolts and move motor in slots until desired tension is obtained.

Belts should be just tight enough to transmit the required power without slipping. Pressing the hand against a properly adjusted flat belt near the cone pulley should depress belt about ½". The V-belt, midway between pulley, should depress about ½". Belts may be cleaned with carbon tetrachloride or naphtha and the flat belt treated with neat's foot oil, if belt is dry and stiff.

FLAT BELT TENSION ADJUSTMENT
(For Texalon Belts Only)

1. Adjust belt tension so belt is just tight enough to remove any slack in the belt (without stretching).
2. Mark pencil lines on face of belt as shown at "A" and "B" exactly 25" apart.
3. Adjust belt tension forcing belt to stretch 1/16" to 1/8" as shown at left. Check with rule (See belt tension adjustment instructions inside door).
   The above amount of belt stretch should provide sufficient belt tension for normal use.

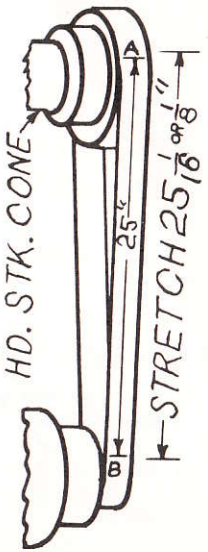


CHART 6514

LUBRICATION CHART

FOR

NINE-INCH AND 10-K LATHES
MODELS A, B & C

HELPFUL SUGGESTIONS FOR THE PROPER MAINTENANCE OF YOUR LATHE WHICH WILL HELP TO PROLONG THE ORIGINAL ACCURACY, ITS SERVICEABLE LIFE AND ITS EASE OF OPERATION.

SET-UP PROCEDURE

1. Look carefully in all packages for small parts, instruction material, etc.
2. Study all reference books and instruction sheets carefully.
3. Clean lathe thoroughly.
4. Do not move carriage until bed ways have been thoroughly cleaned and oiled.
5. Mount on a substantial floor, preferably concrete.
6. Level lathe. (See instructions inside)
7. Lubricate lathe. (See lubrication chart inside)

OPERATIONAL MAINTENANCE

1. Keep your lathe clean.
2. Keep your lathe lubricated as recommended.
3. Keep belts clean and properly adjusted at all times.
4. When your lathe is setting idle keep it covered with one of our service covers. Write for accessory catalog.
5. Do not use an air hose to remove dirt or chips. Air pressure will force foreign matter into bearings, gears, etc., causing serious damage.
6. Recheck lathe leveling periodically.

SOUTH BEND LATHE

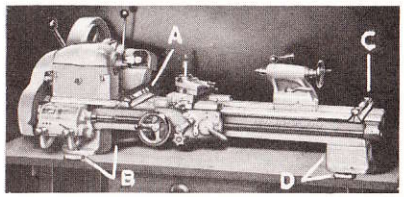
SOUTH BEND, INDIANA, U.S.A. 46621

Building Better Tools Since 1906

LEVELING THE LATHE

The correct installation and leveling of the lathe is more important than is generally realized. Precision tolerances can be maintained only when the lathe is mounted on a solid foundation and properly leveled according to the following instructions.

FOR LATHES WITHOUT TAILSTOCK LEVELING LEG SCREWS



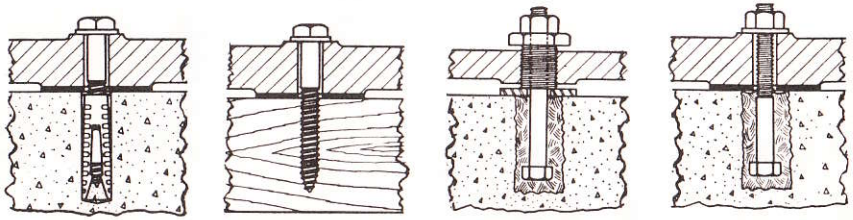
1. Level bench and fasten to floor before mounting and leveling lathe.
2. Clean all dirt, chips, etc., from bed ways.
3. Place precision level squarely across V-ways at "A". (Use South Bend 12" Precision Level, Cat. No. CE2218, or equal.)
4. Drive shims* under headstock leg at "B" until bubble on the level is approximately central. Carefully note the exact position of the bubble in relation to graduations on the level.
5. Move level and place squarely across V-ways at "C". Do not turn level end for end.
6. Drive shims* under leg at "D" until bubble comes to rest at exactly the same position in relation to graduations as when level was at "A".
7. Repeat steps 2, 3, 4, and 5, until level readings at "A" and "C" are identical.
8. Fasten legs at "B" and "D" only to bench.
9. Check again at "A" and "C" to see if level readings have remained the same. If not, the leveling procedure must be repeated. THE LEVEL READINGS SHOULD BE EXACTLY ALIKE AT "A" AND "C" POSITIONS AFTER THE LATHE IS FASTENED TO THE BENCH. OTHERWISE THE LATHE WILL NOT TURN OR BORE ACCURATELY.

TO MAINTAIN ACCURACY CHECK LEVELING PERIODICALLY

South Bend 12" Precision Level

* SHIMS—Should be made of metal or other material not affected by moisture or atmospheric conditions. Tapered steel shims are best. Wood shims are not desirable because of swelling, shrinking, etc., and eventually deteriorate.

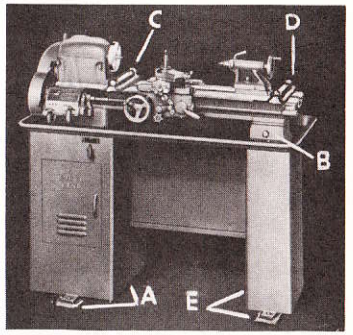
LEVEL—Use a precision level of at least 12" in length and sufficiently sensitive to show a distinct movement of the bubble when a .003" shim is placed under one end of the level. We recommend our 12" South Bend Precision Level Catalog No. CE2218. Moderately priced, this level can be obtained immediately from your nearest South Bend Lathe Distributor or direct from our factory. Do not use a carpenter's or an ordinary machinist's level because they do not have sufficient sensitivity for leveling precision machine tools.



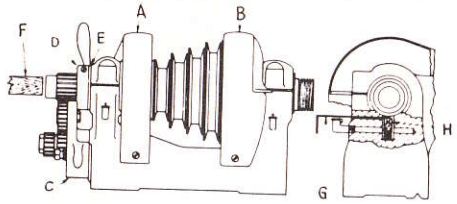
Expansion bolt in concrete. | Lag screw in wood floor. | Machine bolt with leveling screw. | Machine bolt set in melted sulphur.

Methods of securing lathe to floor.

FOR LATHES WITH TAILSTOCK LEVELING LEG SCREWS



1. Clean all dirt, chips, etc., from bed ways.
2. Drive shims* under each leg pad at "A" and "E" so lathe will set firmly on floor at all four points, removing any rocking motion under the legs.
3. Loosen the leveling leg screws at "B", both front and rear screws.
4. Place precision level squarely across V-way at "C" (Use South Bend 12" Precision Level Cat. No. CE2218 or equal).
5. Adjust shims under leg pads at "A" until bubble on the level is approximately central, carefully note the exact position of the bubble in relation to graduations on the level.
6. Without turning level end for end, move level and place squarely across V-ways at "D".
7. Adjust shims under leg pads at "E" until bubble comes to rest at the same position as when level was at "C".
8. Repeat steps 4, 5, 6, and 7, until level readings at "C" and "D" are approximately the same.
9. Fasten to floor.
10. Adjust the Tailstock leg leveling screws at "B" until level readings at "C" and "D" are exactly the same. Then lock leveling screws.
11. CAUTION—THE LEVEL READINGS SHOULD BE EXACTLY ALIKE AT BOTH POSITIONS AFTER THE LEGS ARE FASTENED TO THE FLOOR, OTHERWISE THE LATHE WILL NOT TURN OR BORE ACCURATELY.



INSTRUCTIONS FOR REMOVING HEADSTOCK SPINDLE, INSTALLING NEW V-BELT, AND REPLACING HEADSTOCK SPINDLE ON 9" SOUTH BEND LATHE

TO REMOVE SPINDLE:

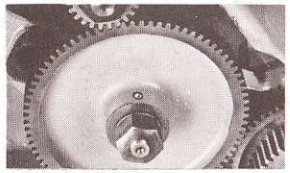
1. Remove gear guards "A" and "B".
2. Remove reverse bracket assembly "C".
3. Loosen binding screw in take-up nut "D". Remove nut "D" and washer "E" from spindle.
4. Drive out the spindle from headstock, using a lead or babbitt hammer, or a wooden block as shown at "F". Drive toward threaded end of spindle. When spindle is being removed from head, the thrust bearing, cone and bull gear will fall out, so be careful not to nick or damage these parts.
5. Install belt.
6. Place a piece of wire, "G", into bearing breather hole, to hold down the oil wicks, "H", at both bearings.

TO REPLACE SPINDLE:

1. Reverse the procedure outlined above, taking care to press the bull gear onto the spindle—do not drive it on. Be very careful not to get dirt into bearings.

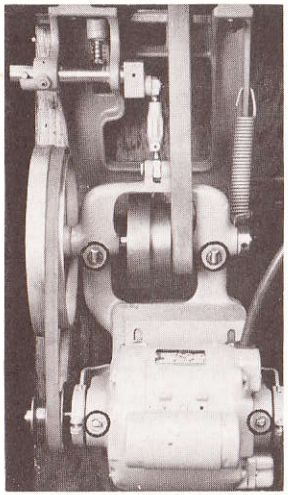
LUBRICATION CHART

10-K LATHES, MODELS A, B & C

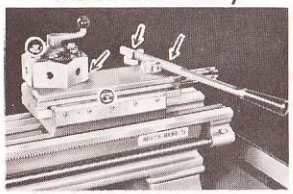


Oiling point for primary idler gear.

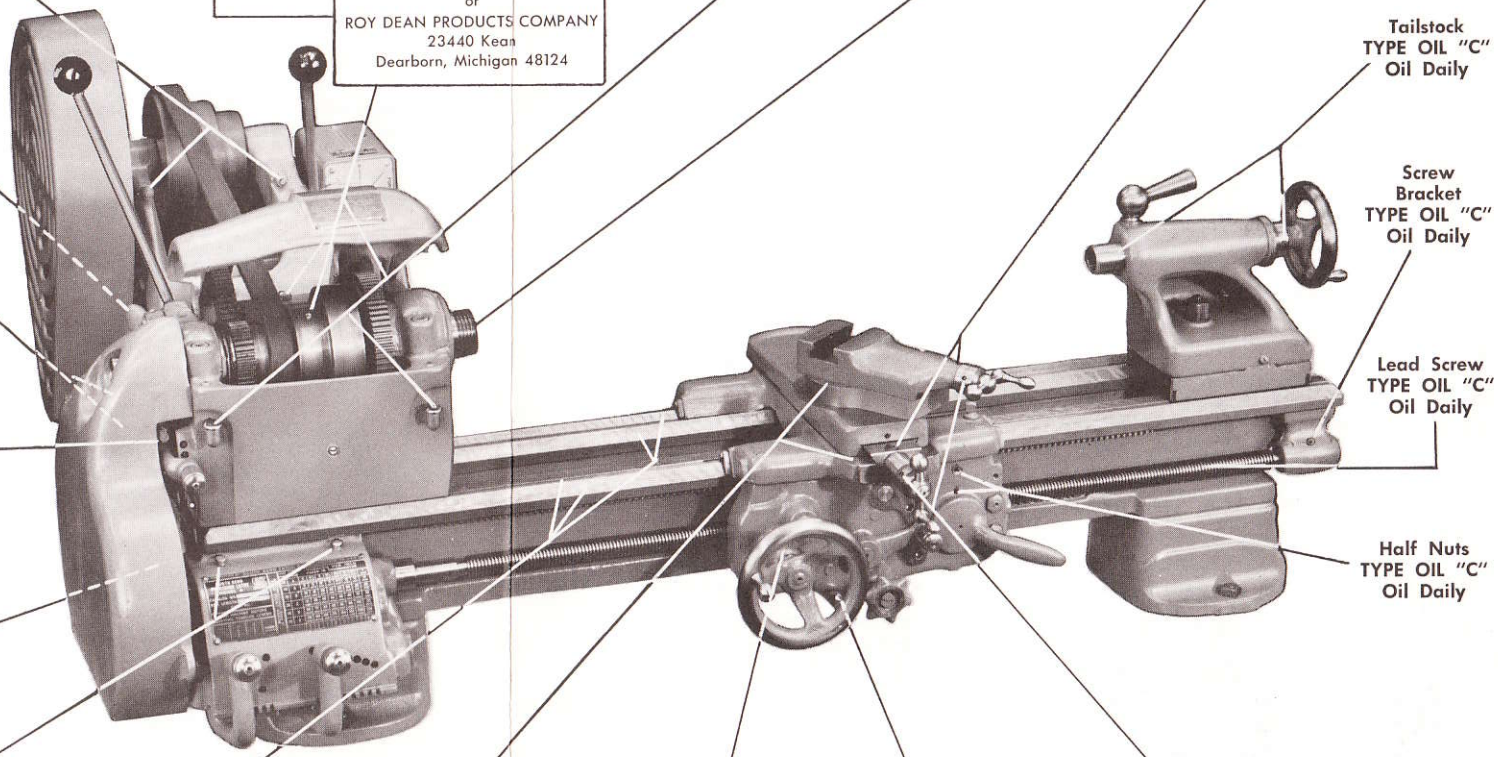
Drain and flush apron every 3 months.



Oiling points on Underneath motor drive lathes. Type "B" Oil on countershaft. Oil Daily. TYPE "A" on Motor. Oil monthly.



Oiling points on Handlever Bed Turret. TYPE "C" oil at all points. Oil Daily.



Counter Shaft Bearings TYPE OIL "B" Keep Full

Back Gears — Spindle Cone

Teflon Grease Lubricant ROY DEAN #DE112

LUBRICATE ANNUALLY order from SOUTH BEND LATHE Cat. No. CE1625 or ROY DEAN PRODUCTS COMPANY 23440 Kean Dearborn, Michigan 48124

Spindle Bearings TYPE OIL "A" Keep Full

Spindle Threads TYPE OIL "C"

Feed Screws TYPE OIL "C" Oil Daily

Tailstock TYPE OIL "C" Oil Daily

Screw Bracket TYPE OIL "C" Oil Daily

Lead Screw TYPE OIL "C" Oil Daily

Half Nuts TYPE OIL "C" Oil Daily

Graduated Collars TYPE OIL "C" Oil Daily

Apron Reservoir TYPE OIL "A" Oil Monthly

Apron Bearings TYPE OIL "C" Oil Daily

Carriage Dovetails TYPE OIL "C" Oil Daily

Bed Ways TYPE OIL "C" Oil Daily

Gear Box TYPE OIL "B" Fill Daily

Idler Gear TYPE OIL "C" Oil Daily

Reverse Bracket TYPE OIL "C" Fill Daily

Motor Bearings TYPE OIL "A" Oil Monthly

Twin Gears TYPE OIL "C" Oil Daily

NINE-INCH LATHES, MODELS A, B & C

Counter Shaft Bearings TYPE OIL "B" Keep Full

Back Gears — Spindle Cone

Teflon Grease Lubricant ROY DEAN #DE112

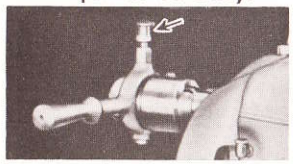
LUBRICATE ANNUALLY order from SOUTH BEND LATHE Cat. No. CE1625

Spindle Bearings TYPE OIL "A" Keep Full

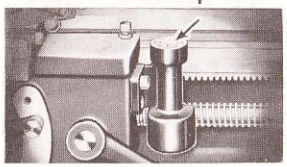
Spindle Threads TYPE OIL "C"

Feed Screws TYPE OIL "C" Oil Daily

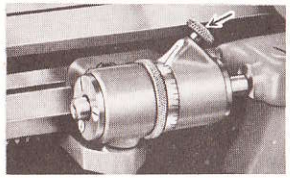
Oiling points on Double Tool Cross Slide. TYPE "C" oil at all points. Oil Daily.



Oiling point on Handlever Type Collet Attachment. TYPE "C" oil. Keep Full.

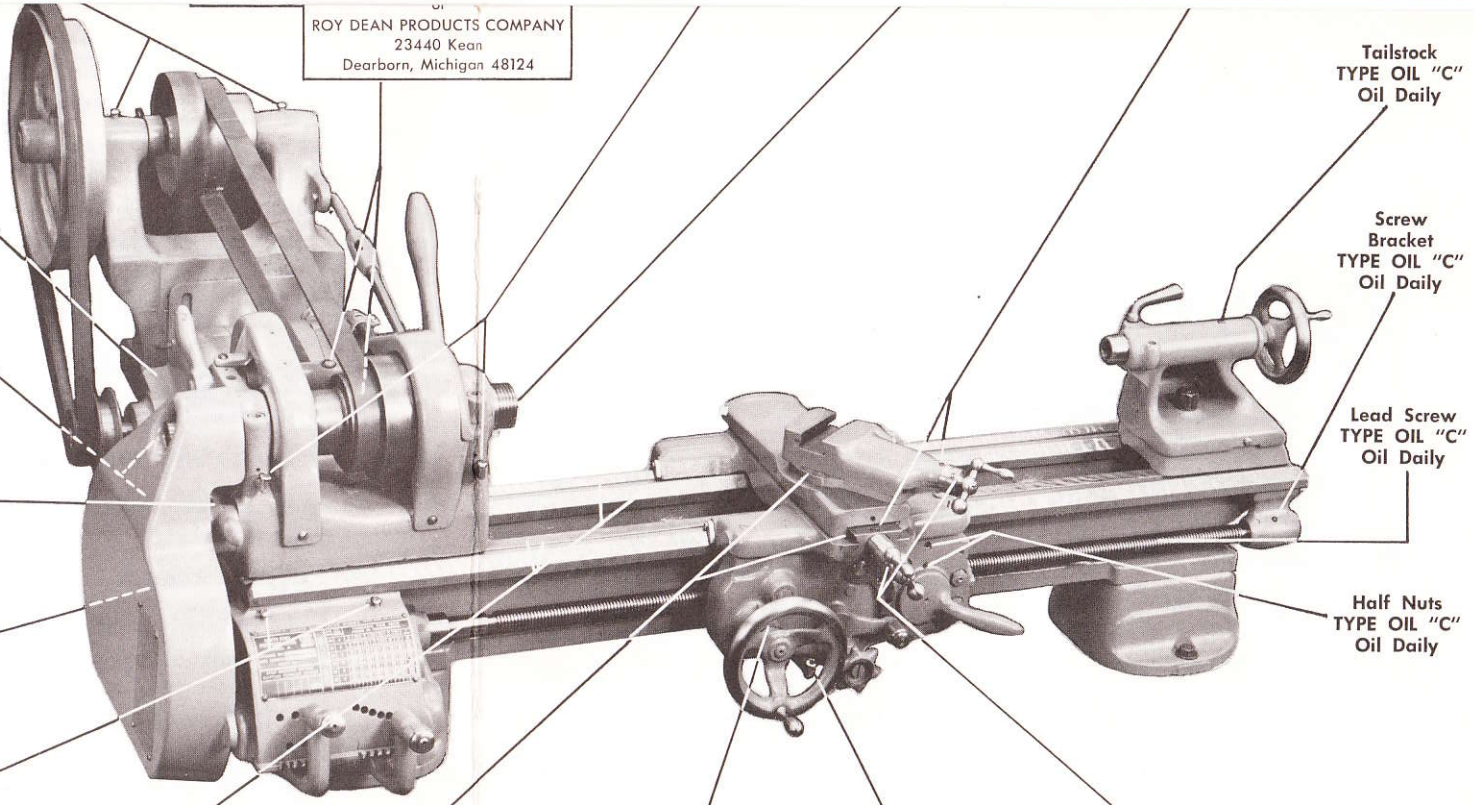


Oiling point on Thread Dial Indicator. TYPE "C" oil. Oil Daily when used.



Oiling point on Micrometer Carriage Stop. TYPE "C" oil Oil Daily when used.

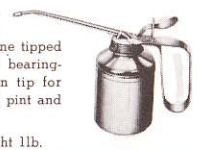
ROY DEAN PRODUCTS COMPANY
23440 Kean
Dearborn, Michigan 48124



Oiling Directions as Indicated are for an 8 hr. shift. When used for longer periods, each operator should oil machine.

PUMP OIL CAN. Suitable for lubricating all types of machinery. Has large nonclogging pump tube. Cone tipped spout seats in oil hole forces oil into bearings and prevents spilling. Hook on tip for opening spring cap oil cups. Holds ⅜ pint and has 6" spout.

CE3575. Pump Oil Can. Shipping weight 1lb.



Your Lathe Will Do Its Part If You Do Yours. Keep It Clean and Oiled.

SBL

LUBRICATING OIL SPECIFICATIONS

Machine Oil Saybolt Universal Viscosity Rating in Seconds at 100°F.			
Company Name	Type A 100 Sec.	Type B 150-240 Sec.	Type C 250-500 Sec.
South Bend Lathe	Qt. can—CE1600 Gal. can—CE2017	Qt. can—CE1602 Gal. can—CE2018	Qt. can—CE1603 Gal. can—CE2019

Contact your nearest South Bend Lathe Distributor or order oil direct from factory at South Bend. Oils developed for automobile crank case lubrication are not recommended for machine tool lubrication.

ADDITIONAL COPIES OF THIS CHART ON REQUEST - ASK FOR CHART 6514

SOUTH BEND LATHE

SOUTH BEND, INDIANA 46621

S6514--LOXM--11-65 Printed in U.S.A.

Building Better Tools Since 1906