

25" AND 32" "AMERICAN" HIGH DUTY LATHES

THE AMERICAN TOOL WORKS CO.
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INSTRUCTIONS FOR INSTALLING, OPERATING AND ADJUSTING LATHES.

SETTING UP STUDY FOUNDATION PLAN SENT WITH MACHINE.

FOUNDATION A CONCRETE FOUNDATION OR FLOOR IS PREFERABLE, BUT A SOLID WOOD FLOOR IS SATISFACTORY. WHEN PREPARING FOOTING FOR SETTING UP LATHE, ALLOW ABOUT TWO INCHES (2") IN EITHER DIRECTION AROUND THE HOLD DOWN BOLTS TO ALLOW FOR VARIATIONS OR SLIGHT ERRORS IN LOCATING THESE BOLTS. A STEEL PLATE SHOULD BE PLACED BETWEEN THE LEG AND THE FOUNDATION FOR SUPPORTING THE LEVELING SCREWS.

LEVELING USE A GOOD PRECISION LEVEL ABOUT 3 FOOT LONG AND GRADUATED TO AT LEAST .001" PER FOOT. (A COMMON CARPENTERS OR MACHINISTS LEVEL IS NOT ACCURATE ENOUGH.) WITH CARRIAGE APPROXIMATELY IN CENTER OF TRAVEL, PLACE LEVEL LONGITUDINALLY ON FRONT CARRIAGE WINGS AND ADJUST LEVELING SCREWS UNTIL BED IS LEVEL LENGTHWISE. THEN PLACE LEVEL CROSSWISE ON BED VEE'S SQUARE AGAINST CARRIAGE AND CLOSE TO HEADSTOCK AND ADJUST LEVELING SCREWS UNTIL LEVEL READING IS OBTAINED. NEXT PLACE LEVEL CROSSWISE ON BED VEE'S, CLOSE TO END OF BED AND SQUARE AGAINST THE BED END, AND ADJUST LEVELING SCREWS UNTIL LEVEL READING IS OBTAINED. WHEN THE HEADSTOCK END AND THE TAIL END ARE LEVEL, PLACE LEVEL CROSSWISE ON BED VEE'S OVER CENTER LEG AND ADJUST LEVELING SCREWS UNTIL LEVEL READING IS OBTAINED. RETEST AT HEAD END AND TAIL END OF BED UNTIL READINGS DIFFER BY LESS THAN A FULL GRADUATION. TO INSURE ACCURATE READINGS MAKE CERTAIN THAT THE LEVEL IS SQUARE AGAINST THE CARRIAGE OR BED END AND ALWAYS POINTING IN THE SAME DIRECTION. AFTER MACHINE IS LEVEL, TIGHTEN HOLD DOWN BOLTS UNTIL SLIGHT TENSION IS SECURED. TOO MUCH TENSION WILL SPRING BED OUT OF LEVEL. IT IS IMPORTANT TO CHECK LEVEL OF LATHE AT LEAST EVERY SIX MONTHS TO INSURE ACCURATE WORK.

CLEANING DO NOT MOVE CARRIAGE UNTIL BED HAS BEEN THOROUGHLY CLEANED AND OILED. FOR CLEANING THE MACHINE KEROSENE IS PREFERABLE TO GASOLINE, AS IT DOES NOT EVAPORATE AND LEAVE DRIED SLUSHING COMPOUND ON FINISHED SURFACES. THE KEROSENE MUST BE ABSOLUTELY CLEAN. IT IS VERY IMPORTANT TO CLEAN THE WAYS OF THE BED CAREFULLY AND THOROUGHLY. LUBRICATE FREELY ALL BEARING SURFACES BEFORE OPERATING MACHINE. SEE THAT NO OIL HOLES ARE CLOGGED.

OILING INSTRUCTIONS THE MACHINE WHEN SHIPPED (UNLESS DISMANTLED) IS LUBRICATED ACCORDING TO DIRECTIONS APPEARING ON THE OILING INSTRUCTION PLATE ON THE REAR OF THE HEAD. CAUTION - IF OIL FILTER HANDLE BECOMES TOO TIGHT TO TURN BY HAND, REMOVE FILTER AND CLEANSE WITH KEROSENE AND COMPRESSED AIR. DO NOT FORCE HANDLE. TO LUBRICATE OBSERVE THE FOLLOWING;

HEAD IS PROVIDED WITH AUTOMATIC PUMP LUBRICATION. OIL PASSING THRU THE FLOW GAUGE IN FRONT OF HEAD SHOWS THAT THE PUMP IS WORKING. FOLLOW INSTRUCTIONS ON OIL FILTER AT REAR OF HEAD. USE A HIGH GRADE MACHINE OIL, VISCOSITY 275-290 SECONDS SAYBOLT AT 100 DEGREES FAHRENHEIT. DRAIN AND REFILL EVERY SIX MONTHS THEREAFTER. KEEP OIL LEVEL BETWEEN HIGH AND LOW LIMIT ON GAUGE.

APRON AND CARRIAGE IS PROVIDED WITH HAND OPERATED FORCE FEED PUMP. BEFORE STARTING USE LEVER "A" UNTIL OIL SHOWS THRU WIPER AT REAR RIGHT HAND CARRIAGE WING. USE AN OIL COMPOUNDED FOR HIGH FILM STRENGTH, SOCONY-VACUUM VACTRA EXTRA HEAVY "X" OR EQUIVALENT. KEEP OIL LEVEL BETWEEN HIGH AND LOW LIMIT ON GAUGE.

GEAR BOX IS PROVIDED WITH A PLUNGER TYPE OILING SYSTEM. BEFORE STARTING MACHINE DEPRESS PLUNGER 5 TIMES. USE A HIGH GRADE MACHINE OIL, VISCOSITY 275-290 SECONDS SAYBOLT AT 100 DEGREES FAHRENHEIT. KEEP OIL LEVEL BETWEEN HIGH AND LOW LIMIT ON GAUGE.

POWER TRAVERSE USE A HIGH GRADE MACHINE OIL, VISCOSITY 275-290 SECONDS SAYBOLT AT 100 DEGREES FAHRENHEIT. KEEP OIL LEVEL BETWEEN HIGH AND LOW LIMIT ON GAUGE.

FEED MECHANISM LUBRICATE DAILY. USE A HIGH GRADE MACHINE OIL.

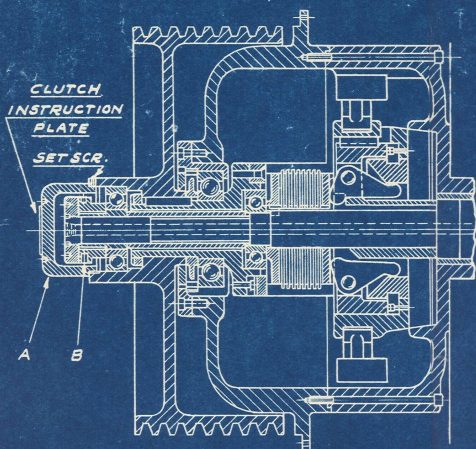
HAND OIL STATIONS LUBRICATE WEEKLY. USE A HIGH GRADE MACHINE OIL.

MOTOR LUBRICATE AS PER MOTOR MANUFACTURERS INSTRUCTIONS DEPENDING UPON THE TYPE OF BEARINGS.

NOTE THE ABOVE LUBRICATING PERIODS ARE BASED ON AN EIGHT HOUR DAY. IF THE WORKING TIME IS DOUBLED OR TRIPLED CHANGE LUBRICATION PERIODS TO SUIT.

MOTOR DRIVES TWO TYPES OF MOTOR DRIVES ARE FURNISHED, MOTOR MOUNTED ON HEAD OR MOTOR ON PLATFORM AT REAR OF HEAD END LEG. IN EITHER CASE THERE IS MEANS OF ADJUSTING BELT TENSION. THE MOTOR ON HEAD IS MOUNTED ON A HINGED PLATE WHICH CAN BE ADJUSTED BY MEANS OF A SCREW CONVENIENTLY LOCATED. THE MOTOR ON PLATFORM IS MOUNTED ON A SLIDING PLATE THAT IS PROVIDED WITH SCREW ADJUSTING MEANS.

STARTING CLUTCH AND BRAKE UNIT THE STARTING CLUTCH AND BRAKE UNIT IS A SELF-CONTAINED TROUBLE-FREE UNIT BOLTED AND DOWELED TO THE HEADSTOCK. IT IS AUTOMATICALLY OILED BY THE CIRCULATING SYSTEM OF THE HEAD. TO ADJUST THE MULTIPLE DISC CLUTCH, REMOVE THE SMALL ROUND COVER ON BELT GUARD AND FOLLOW INSTRUCTIONS ON THE PULLEY HUB COVER, WHICH STATES THAT YOU SHOULD LOOSEN SET SCREW IN PULLEY HUB COVER "A" FIG. 1, UNSCREW COVER, LOOSEN SET SCREW IN NUT "B" FIG. 1, AND TURN NUT UNTIL THE TOGGLE FINGERS CAN BE FELT TO HAVE RIDDEN OVER THE TAPER AND SNAPPED INTO THE ENGAGED POSITION. DO NOT ADJUST CLUTCH SO TIGHTLY THAT SNAP CANNOT BE FELT. WHEN ADJUSTMENT HAS BEEN COMPLETED, MAKE SURE THAT BOTH OF THE SET SCREWS HAVE BEEN TIGHTENED.



CLUTCH FRICTION ADJUSTMENT
FIG. 1

THE SLIDING TUMBLER IN THE GEAR BOX PROVIDES 8 CHANGES FOR EACH OF THE 4 POSITIONS OF THE TWO AUXILIARY GEAR CHANGE LEVERS. THE TUMBLER CHANGES SHOULD NOT BE MADE UNTIL THE CLUTCH HAS BEEN DISENGAGED AND THE SPINDLE HAS SLOWED DOWN, AND THEN THE SPINDLE SHOULD BE JOGGED WITH THE CLUTCH LEVER TO PERMIT THE GEARS TO ENGAGE MORE READILY. THE AUXILIARY CHANGE GEAR LEVERS SHOULD BE MOVED IN THE SAME MANNER.

LEADSCREW TO LOCATE END PLAY IN LEADSCREW, ENGAGE APRON HALF NUTS AND MOVE CARRIAGE BACK AND FORTH BY HAND. TO ELIMINATE END PLAY, REMOVE COVER FROM HEAD END LEADSCREW BEARING, LOOSEN SET SCREW IN NUT AND TURN SAME TO THE RIGHT UNTIL PROPER ADJUSTMENT IS OBTAINED. TIGHTEN SET SCREW AND REPLACE COVER.

APRON TO ADJUST "PLAY" IN FRICTION DROP LEVERS, STOP SPINDLE, RAISE LEVER INTO ENGAGED POSITION, LOOSEN SET SCREW ON LEFT HAND SIDE OF FRICTION HOUSING, LOOSEN BINDER SCREW AT BOTTOM OF HOUSING AND TAP HOUSING TOWARD APRON UNTIL "PLAY" IS REMOVED FROM LEVER, THEN TIGHTEN BINDER AND SET SCREWS. TO ADJUST "FRICTION", STOP SPINDLE, RAISE LEVER TO ENGAGED POSITION, REMOVE SET SCREW, LOOSEN BINDER SCREW AND REMOVE HOUSING COMPLETELY. MAKE SURE THAT THE ANTI-FRICTION THRUST BEARING OR THE THRUST WASHER HAVE NOT FALLEN OFF SHAFT. TURN ADJUSTING NUT TO DESIRED TENSION, REPLACE HOUSING, TAKING CARE TO HAVE SET-SCREW COUNTERSINK "LINE-UP" WITH SET SCREW HOLE. TIGHTEN BINDER SCREW, FIRST MAKING SURE THAT THERE IS NO "PLAY" IN DROP LEVER, REPLACE AND TIGHTEN SET SCREW.

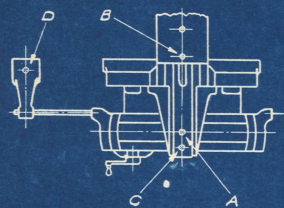
CARRIAGE TO ADJUST THE COMPENSATING CROSS FEED NUT FOR WEAR AND ACCOMPANYING BACKLASH, LOOSEN THE HEX HEAD SCREW "C" FIG. 3 ABOUT A QUARTER TURN AND TURN HOLLOW HEAD SCREW "B" TO THE RIGHT TO DRAW UP ADJUSTING WEDGE. THE CORRECT PROCEDURE IS TO ADJUST SCREW "B" ONE QUARTER TURN AND THEN TO TAP SCREW "C" WITH A BABBITT OR WOOD BLOCK, AT THE SAME TIME TURNING THE CROSS FEED SCREW HANDWHEEL TO THE RIGHT AND LEFT TO FEEL FOR THE CORRECT ADJUSTMENT. WHEN ADJUSTMENT IS OBTAINED TIGHTEN SCREW "C". DO NOT LOOSEN SCREW "A" AT ANY TIME.



CROSS FEED NUT ADJ.
FIG. 3

TAPER ATTACHMENT

OPERATING INSTRUCTIONS



TAPER ATTACHMENT
FIG. 4

TELESCOPIC TYPE CROSS FEED CONTROL

SET TO REQUIRED TAPER	
TIGHTEN SCREW	A
LOOSEN NUT	B
LOOSEN SCREW	C
TIGHTEN NUT	D

RIGID TYPE

SET TO REQUIRED TAPER	
TIGHTEN SCREW	A
TIGHTEN NUT	B
LOOSEN SCREW	C
TIGHTEN NUT	D

STRAIGHT TURNING

TIGHTEN SCREW	A
LOOSEN NUT	B
TIGHTEN SCREW	C
LOOSEN NUT	D

CAUTION - SCREW "C" MUST ALWAYS BE LOOSE WHEN TURNING TAPERS.

TAILSTOCK THERE IS A SET-OVER ADJUSTMENT PROVIDED FOR THE TAILSTOCK. THIS SET-OVER IS OBTAINED BY THE ADJUSTMENT OF HEX-HEAD SCREWS, ONE LOCATED AT THE FRONT AND ONE AT THE REAR OF THE TAILSTOCK, DIRECTLY OVER THE TONGUE SLOT.

POWER RAPID TRAVERSE FOR CARRIAGE CONTROL IS BY DIRECTIONAL LEVER AT THE RIGHT SIDE OF CARRIAGE. **IMPORTANT** THE LONGITUDINAL FEED CLUTCH AND THE HALF-NUTS MUST BE DISENGAGED BEFORE MOVING TRAVERSE LEVER IN EITHER DIRECTION.

SERIAL NUMBER AND REPAIR PARTS SHOULD IT BE NECESSARY TO ORDER REPAIR PARTS, ALWAYS GIVE THE SERIAL NUMBER OF THE MACHINE AND THE KEY NUMBER OF THE PART. THIS SERIAL NUMBER IS STAMPED ON THE FRONT OF THE TAILSTOCK END OF THE BED. THE KEY NUMBER OF THE PART WILL BE FOUND IN THE PARTS CATALOG.

TO ADJUST BRAKE, FIG. 2, A "SPACE" FROM $\frac{1}{16}$ " TO $\frac{1}{8}$ " MUST BE MAINTAINED WHEN BRAKE IS IN ENGAGED POSITION, AND TO INCREASE SPRING TENSION TIGHTEN NUT "A".

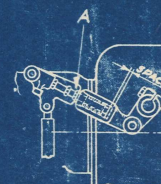
SPINDLE BEARING ADJUSTMENT

REMOVE PLUG IN TOP OF REVERSE PLATE COVER, INSERT WRENCH AND LOOSEN SET SCREW IN NUT ON END OF SPINDLE. WITH WRENCH IN THIS POSITION TURN FACE PLATE COUNTER-CLOCKWISE UNTIL TIGHT, BACK OFF TO OBTAIN DESIRED RUNNING CLEARANCE. TIGHTEN SET SCREW AND REPLACE PLUG IN REVERSE PLATE COVER.

SPINDLE SPEED CHANGE. SPEED CHANGES SHOULD BE MADE ONLY AFTER THE CLUTCH HAS BEEN DISENGAGED, AND PREFERABLY JUST BEFORE THE SPINDLE STOPS. SOMETIMES WHEN SHIFTING GEARS AFTER SPINDLE HAS COME TO A COMPLETE STOP IT IS NECESSARY TO JOG THE SPINDLE A BIT WITH THE CLUTCH CONTROL LEVER TO ALLOW GEARS TO MESH.

REVERSE PLATE AND GEAR BOX

THE REVERSE PLATE IS USED TO REVERSE THE DIRECTION OF THE LEADSCREW WHEN CHASING LEFT HAND THREADS.



BRAKE ADJUSTMENT
FIG. 2