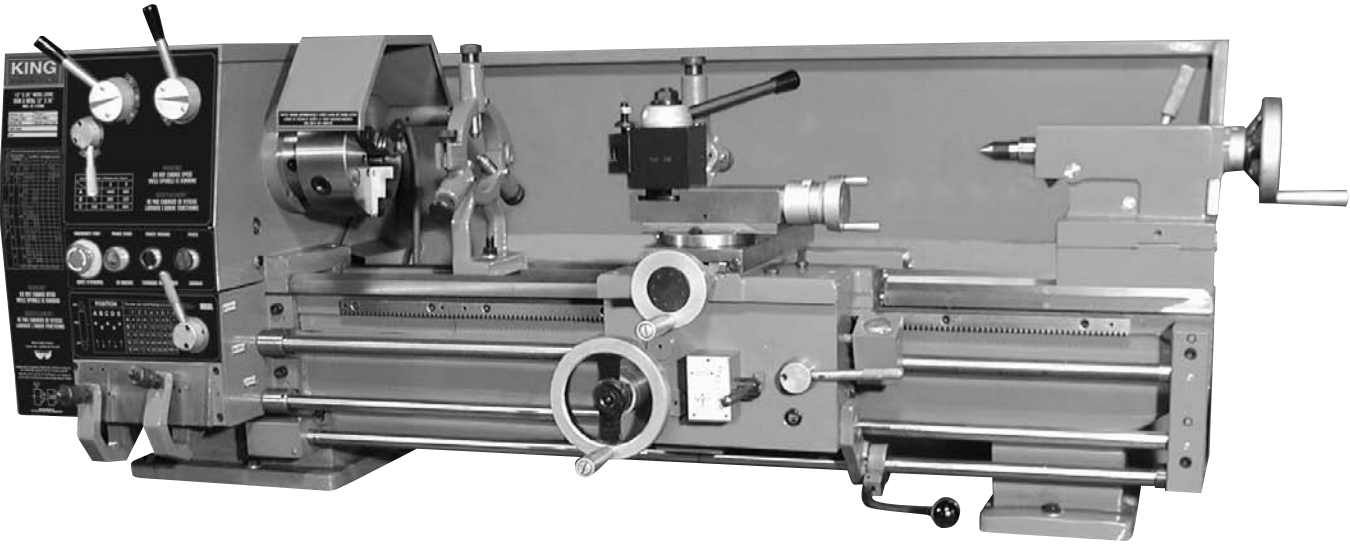




# 12" X 36" GEARHEAD METAL LATHE



MODEL: KC-1236ML

# INSTRUCTION MANUAL

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## IMPORTANT INFORMATION

**2-YEAR**  
LIMITED WARRANTY  
FOR THIS 12" X 36" METAL LATHE

**KING CANADA TOOLS**  
OFFERS A 2-YEAR LIMITED WARRANTY  
FOR INDUSTRIAL USE.

### PROOF OF PURCHASE

Please keep your dated proof of purchase for warranty and servicing purposes.

### REPLACEMENT PARTS

Replacement parts for this tool are available at our authorized KING CANADA service centers across Canada. For servicing, contact or return to the retailer where you purchased your product along with your proof of purchase.

### LIMITED TOOL WARRANTY

KING CANADA makes every effort to ensure that this product meets high quality and durability standards. KING CANADA warrants to the original retail consumer a 1-year limited warranty as of the date the product was purchased at retail and that each product is free from defects in materials. Warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, repairs or alterations and lack of maintenance. KING CANADA shall in no event be liable for death, injuries to persons or property or for incidental, special or consequential damages arising from the use of our products. To take advantage of this warranty, the product or part must be returned for examination by the retailer. Shipping and handling charges may apply. If a defect is found, KING CANADA will either repair or replace the product.

# GENERAL SAFETY INSTRUCTIONS FOR POWER TOOLS



## 1. KNOW YOUR TOOL

Read and understand the owners manual and labels affixed to the tool. Learn its application and limitations as well as its specific potential hazards.

## 2. GROUND THE TOOL.

This tool is equipped with an approved 3-conductor cord and a 3-prong grounding type plug to fit the proper grounding type receptacle. The green conductor in the cord is the grounding wire. **NEVER** connect the green wire to a live terminal.

## 3. KEEP GUARDS IN PLACE.

Keep in good working order, properly adjusted and aligned.

## 4. REMOVE ADJUSTING KEYS AND WRENCHES.

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

## 5. KEEP WORK AREA CLEAN.

Cluttered areas and benches invite accidents. Make sure the floor is clean and not slippery due to wax and sawdust build-up.

## 6. AVOID DANGEROUS ENVIRONMENT.

Don't use power tools in damp or wet locations or expose them to rain. Keep work area well lit and provide adequate surrounding work space.

## 7. KEEP CHILDREN AWAY.

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

## 8. MAKE WORKSHOP CHILD-PROOF.

Use padlocks, master switches or remove starter keys.

## 9. USE PROPER SPEED.

A tool will do a better and safer job when operated at the proper speed.

## 10. USE RIGHT TOOL.

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

## 11. WEAR PROPER APPAREL.

Do not wear loose clothing, gloves, neckties or jewelry (rings, watch) because they could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair. Roll up long sleeves above the elbows.

## 12. ALWAYS WEAR SAFETY GLASSES.

Always wear safety glasses (ANSI Z87.1). Everyday eyeglasses only have impact resistant lenses, they are **NOT** safety glasses. Also use a face or dust mask if cutting operation is dusty.

## 13. DON'T OVERREACH.

Keep proper footing and balance at all times.

## 14. MAINTAIN TOOL WITH CARE.

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

## 15. DISCONNECT TOOLS.

Before servicing, when changing accessories or attachments.

## 16. AVOID ACCIDENTAL STARTING.

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

## 17. USE RECOMMENDED ACCESSORIES.

Consult the manual for recommended accessories. Follow the instructions that accompany the accessories. The use of improper accessories may cause hazards.

## 18. NEVER STAND ON TOOL.

Serious injury could occur if the tool tips over. Do not store materials such that it is necessary to stand on the tool to reach them.

## 19. CHECK DAMAGED PARTS.

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

## 20. NEVER LEAVE MACHINE RUNNING UNATTENDED.

Turn power "OFF". Don't leave any tool running until it comes to a complete stop.



# ELECTRICAL & TECHNICAL INFORMATION

## ELECTRICAL INFORMATION

### WARNING!

ALL ELECTRICAL CONNECTIONS MUST BE DONE BY A QUALIFIED ELECTRICIAN. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY! ALL ADJUSTMENTS OR REPAIRS MUST BE DONE WITH THE METAL LATHE DISCONNECTED FROM THE POWER SOURCE. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY!

### POWER SUPPLY

### WARNING:

THIS METAL LATHE MUST BE 'HARDWIRED' (connected directly to the circuit breaker without the use of a plug). We recommend that only a qualified electrician do the initial 'Hardwiring' of this metal lathe.

### WARNING:

YOUR METAL LATHE MUST BE CONNECTED TO A 240V, 15-AMP (MINIMUM) BRANCH CIRCUIT WITH A 15-AMP TIME DELAY FUSE OR CIRCUIT BREAKER. FAILURE TO CONNECT IN THIS WAY CAN RESULT IN INJURY FROM SHOCK OR FIRE.

THIS METAL LATHE MUST BE GROUNDED. IF NOT PROPERLY GROUNDED, THIS METAL LATHE CAN CAUSE ELECTRICAL SHOCK, PARTICULARLY WHEN USED IN DAMP LOCATIONS. TO AVOID SHOCK OR FIRE, IF THE POWER CORD IS WORN OR DAMAGED IN ANY WAY, HAVE IT REPLACED IMMEDIATELY.

## TECHNICAL INFORMATION

### Main Specifications

Max. swing over bed .....	12" (300mm)
Max. swing over saddle gap .....	18" (455mm)
Max. swing over cross slide .....	7-1/4" (184mm)
Distance between centers .....	36" (900mm)

### Headstock

Spindle bore diameter .....	1-1/2" (38mm)
Spindle bore taper .....	MT#5
Spindle speed range .....	9 (60-1500 R.P.M.)

### Change Gears and Gear Box

Thread cutting: .....	Inches- 40 kinds (4-112 T.P.I.)
.....	Metric- 29 kinds (0.2 - 4.5mm)
Lead Screw T.P.I.....	8 T.P.I.
Cross Screw T.P.I. ....	8 T.P.I.

### Tool Post, Saddle, Tailstock

Top Slide travel .....	3-3/8" (85mm)
Cross Slide travel .....	6-3/8" (161mm)
Tailstock taper .....	MT#3
Tailstock quill travel .....	4" (100mm)
Diameter of Tailstock quill .....	1-1/4" (32mm)

### Motor

Horsepower .....	1.5 HP
Voltage .....	240V, 1 phase
Amperage.....	8.7 amp.
Motor R.P.M.....	1720 R.P.M.
Motor frequency .....	60Hz

# CLEANING, TEST RUN, GETTING TO KNOW YOUR LATHE



Before operating this metal lathe, read this instruction manual and familiarize yourself with the required adjustments, operation procedures, maintenance and lubrication.

## CLEANING & PREPARING LATHE BEFORE THE FIRST TEST RUN

After unpacking, remove the paper (or grease found on unpainted ground surfaces) from the machine and using a non-volatile solvent and a brush, remove grease.

During transport and unpacking, it is likely that debris will be present on top of the lathe. Do not move the carriage and the tailstock until the rest of the metal lathe (mainly the bed) has been thoroughly cleaned.

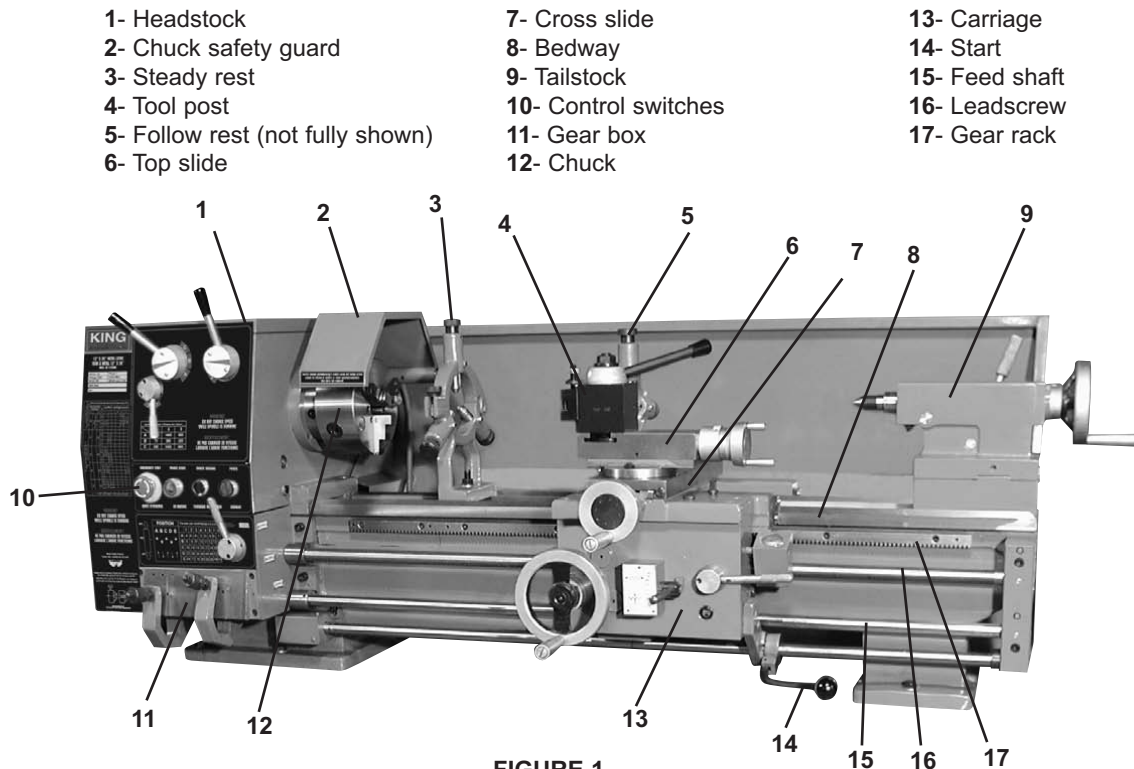
Remove all accessories and machine parts from the tool box and install all the handles and knobs. Fix the follow rest to the carriage using 2 cap screws and fix the steady rest inbetween the chuck and the carriage.

Make sure that all lubrication points and oil levels have been inspected before putting your metal lathe into operation. See "Lubrication Points" section further in this manual before operating your lathe.

This machine is equipped with 2 V-belts from the motor to the lower rear pulley. It is advisable to check the belt tension before starting the metal lathe. There should be no more than a 1/2" center deflection with light finger pressure. Adjust the V-belt tension as necessary. V-belts which are tensioned too tightly will damage the bearing.

Before performing test runs, set the changing lever on the lowest speed and let the machine operate for 20 minutes. If everything is functioning normally, increase the spindle speed step by step until the highest speed, each step operating for 5 minutes.

## Getting to know your Metal Lathe



### Optional Accessories available:

- KLC-3M -Live Center (MT#3)
- SS-1236 -Stand
- KM-057 -7pc. Deluxe Cutter Holder Set



# OPERATING LEVERS

## Metal Lathe Operating Levers (Fig.2)

### Headstock Levers

- Levers 1 & 2 located on the front side of the headstock allow you to set the desired speed from 60-1500 RPM.
- Lever 11 starts and stops the spindle. If lever 11 is placed in the up position, the spindle will turn counterclockwise. If lever 11 is placed in the down position, the spindle will turn clockwise.

### Quick Change Gear Box Levers

- Lever 4 is a threading or turning selection lever. There are 3 positions, left position for turning operation, center position for neutral setting and the right position for threading operation.
- Levers 5 & 6 control the gear box feed rate. Lever 5 has 5 positions and lever 6 has 8 positions. Moving these two tumbler levers can provide many feed rates and inch thread pitches as indicated in the charts in the metal lathe plates. With the use of metric change gears, the two tumbler levers can also provide metric threads using the "MM Gear Change" chart which is also found in the metal lathe plates.

**Caution: Always stop the spindle before engaging any of the above levers (Levers 4-6).**

### Carriage Assembly Levers

- Handwheel 7 is used to manually move the carriage along the bedway of the lathe.
- The crossfeed handwheel 19 is used to manually move the cross slide in or out.
- The top slide handwheel 16 is used to manually move the tool post. The top slide is fully adjustable to any angle and is also used for threading or machining an angle on a workpiece.
- The thread lever 9 is used to engage the half nuts when threading.
- The feed lever 8 is used to engage either the longitudinal or cross

feed. This lever has a safety interlock to prevent accidental engagement of the half nuts when the lathe is in feed mode. There are 3 positions; the upper position engages the power longitudinal feed, the lower position engages the power cross feed and the center position is the disengaged position.

- The lead/feed lever 3 is used to change the direction of either the longitudinal or cross feed, yet without changing the direction of the spindle rotation.
- The thread cutting dial 10 is used to engage the half nuts with the leadscrew in the same thread that has been previously cut. Please note: Use any line of the dial for even pitches of threads, but for odd pitches of threads you must use the same starting line. Example: When cutting a shaft with 10 T.P.I., engage the half nuts at any number on the thread dial, when creating an odd pitch, if you start the cut using 1 or a 3, continue to use the 1 or the 3 until the thread is finished.
- The clamp lever 18 is used to secure the tool post block.
- Saddle lock screw 17 is used to firmly clamp the saddle to the bedway.
- Top slide set screw 20 is used to clamp the top slide to the cross slide.

### Tailstock levers

- The handwheel 12 is used to feed or retreat the tailstock quill. Tip: Turning the handwheel completely counterclockwise until a full stop will automatically eject the turning tool used.
- The tailstock clamp lever 13 locks the tailstock to the bedway. To lock, pull the lever upwards, to release lower the lever.
- The tailstock quill lock lever 15 prevents the quill from moving.
- The 2 set screws 14 on either side of the base are used to offset the tailstock. After taper adjustments are made, retighten both set screws.

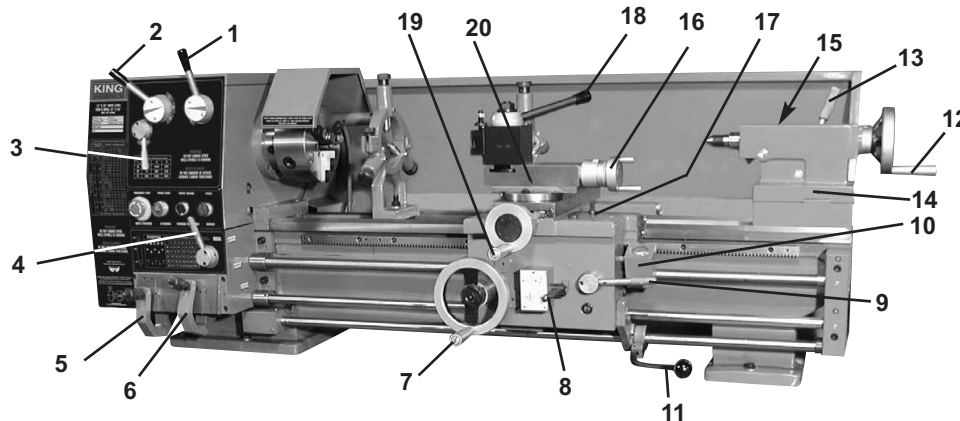


FIGURE 2

# METAL LATHE CHARTS



## Metal Lathe Charts

Below are all the charts which are found on the metal lathe plates. We have included these charts in this manual for reference purposes, in case one or many plates have been damaged and are no longer readable.

		mm C.T.							
Position		1	2	3	4	5	6	7	8
A	~	0.791	0.703	0.666	0.632	0.575	0.527	0.486	0.452
	≡	0.268	0.238	0.226	0.214	0.196	0.178	0.166	0.154
B	~	0.395	0.351	0.333	0.316	0.287	0.264	0.243	0.226
	≡	0.134	0.119	0.113	0.107	0.098	0.089	0.083	0.077
C	~	0.198	0.175	0.167	0.158	0.144	0.132	0.122	0.113
	≡	0.067	0.060	0.057	0.054	0.049	0.045	0.042	0.036
D	~	0.099	0.088	0.083	0.079	0.072	0.066	0.061	0.057
	≡	0.033	0.030	0.028	0.027	0.025	0.022	0.021	0.019
E	~	0.050	0.044	0.042	0.040	0.036	0.033	0.031	0.028
	≡	0.017	0.015	0.014	0.014	0.012	0.011	0.011	0.010

		Inch/Pouce							
Position		1	2	3	4	5	6	7	8
A	~	0.0311	0.0277	0.0262	0.0249	0.0226	0.0207	0.0191	0.0178
	≡	0.0105	0.0094	0.0089	0.0084	0.0077	0.0070	0.0065	0.0061
B	~	0.0156	0.0138	0.0131	0.0124	0.0113	0.0104	0.0096	0.0089
	≡	0.0053	0.0047	0.0044	0.0042	0.0039	0.0035	0.0032	0.0030
C	~	0.0078	0.0069	0.0066	0.0062	0.0057	0.0052	0.0048	0.0044
	≡	0.0026	0.0024	0.0022	0.0021	0.0019	0.0018	0.0017	0.0015
D	~	0.0039	0.0035	0.0033	0.0031	0.0028	0.0026	0.0024	0.0022
	≡	0.0013	0.0012	0.0011	0.0011	0.0010	0.0009	0.0008	0.0007
E	~	0.0020	0.0017	0.0017	0.0016	0.0014	0.0013	0.0012	0.0011
	≡	0.0007	0.0006	0.0006	0.0006	0.0005	0.0004	0.0004	0.0004

FIGURE 3- Feed Rate Chart

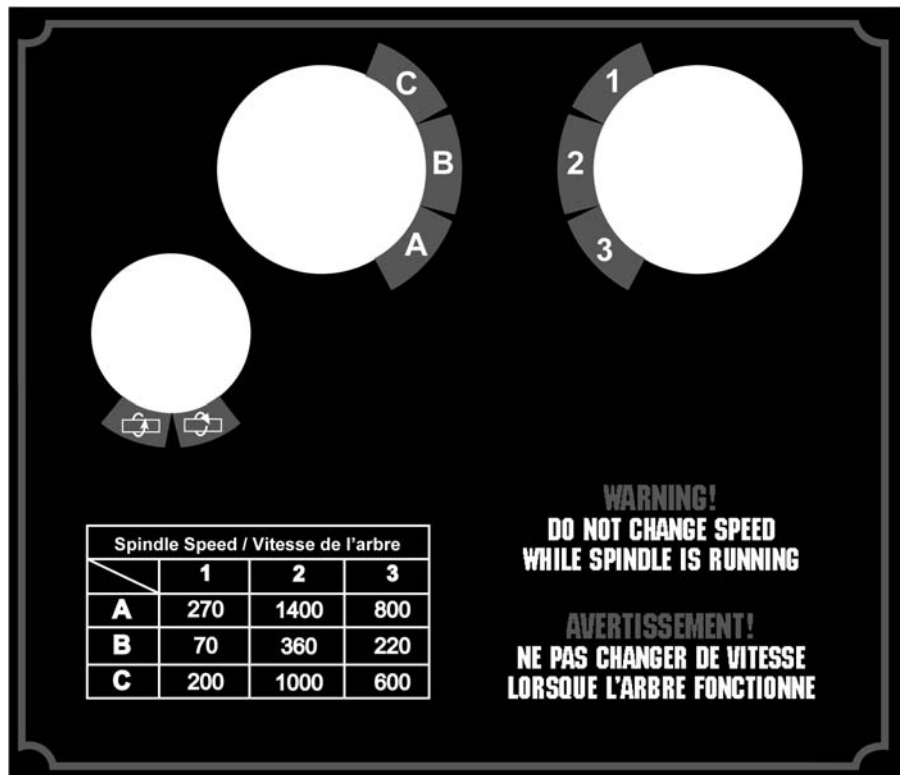


FIGURE 4- 9 Step Spindle Speed Chart

MM Gear Change/Changement des Engrenages MM		Gear Combination/Combinaison des Engrenages		mm/Pitch mm/Déplacement					
F	G	Position		1	2	3	4	5	6
26 Any N'importe quel	60	A						2.0	
		B					1.0	0.9	
		C	0.7				0.5	0.45	
		D	0.35				0.25		
		E							
27	60	A							
		B		1.2					
		C		0.6					
		D		0.3					
		E							
35 F 60T	60	A						3.5	
		B		1.75					
		C	0.875	0.8					
		D		0.4					
		E		0.2					
45 G	60	A						4.5	3
		B		2.25				1.5	
		C	1.125					0.75	
		D							
		E							
50	60	A						5	
		B		2.5	2.2				
		C	1.25	1.1					
		D		0.55					
		E							

From Left to Right / De Gauche à Droite

FIGURE 5- Metric Change Gear Chart

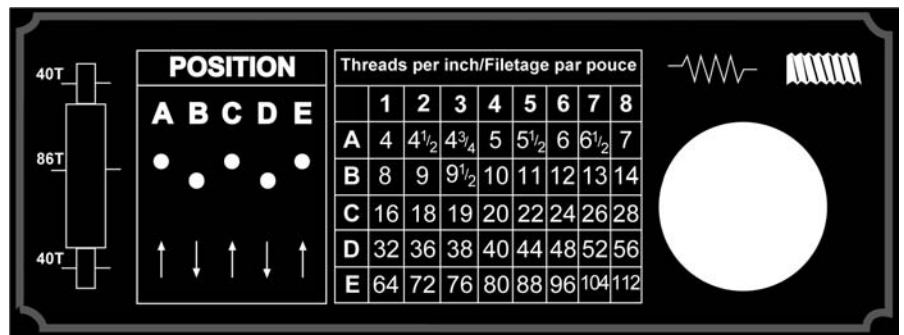


FIGURE 6- Inch Thread Pitch Chart

INDICATOR TABLE TABLEAU INDICATEUR					
T.P.I.	Scale Echelle	T.P.I.	Scale Echelle	T.P.I.	Scale Echelle
4	1 - 8	13	1.3	44	1 - 8
4 1/2	1	14	1,2,3,4	48	1 - 8
4 3/4	1	16	1 - 8	52	1 - 8
5	1.3	18	1,2,3,4	56	1 - 8
5 1/2	1	19	1.3	64	1 - 8
6	1,2,3,4	20	1 - 8	72	1 - 8
6 1/2	1	22	1,2,3,4	76	1 - 8
7	1.3	24	1 - 8	80	1 - 8
8	1 - 8	26	1,2,3,4	88	1 - 8
9	1.3	28	1 - 8	96	1 - 8
9 1/2	1	32	1 - 8	104	1 - 8
10	1,2,3,4	36	1 - 8	112	1 - 8
11	1.3	38	1,2,3,4		
12	1 - 8	40	1 - 8		

FIGURE 7- Thread Dial Indicator Chart

## Mounting or removing chuck or face plate

Before mounting a chuck, face plate or other attachments (A) Fig.8, it is very important that the mounting surfaces on both the spindle nose (B) and the attachment are extremely clean.

All the camlocks (C) should be in their release position (camlock mark line matches the spindle nose mark line) and the cap screws (D) must be loosened before mounting. Mount the attachment onto the spindle nose, once the attachment is in position, each camlock must be tightened and locked into place. Camlocks are tightened by turning them clockwise using the provided Camlock Key. The cams are properly locked into place when the camlock mark line is in between the 2 V's on the spindle nose, see Fig.8. Retighten cap screws (D) into spindle nose and tighten using appropriate hex. key.

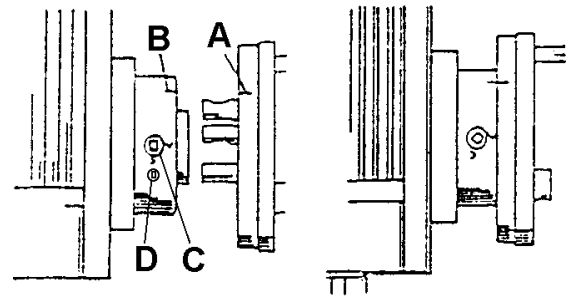


FIGURE 8

## Adjusting and reversing chuck jaws

Chuck jaws (A) Fig.9 can be opened or closed by using the camlock key in the jaw adjustment cams (B). Turning the camlock key (C) clockwise will close the jaw opening and counterclockwise will open the jaw opening.

Before reversing the direction of the chuck jaws, two major points must be followed every time.

- 1) The chuck jaws are numbered (ex.: 3 jaw chuck- 1,2,3) and must be placed in numerical order into the chuck.
- 2) If the chuck jaws are to be removed, you must replace them in the identical slot which they were taken out of. (Make sure they are also in numerical order).

To remove chuck jaws, open jaw opening all the way using camlock key until the jaws practically fall out. Do not let the jaws fall, hold them while you open the jaw opening. Change the direction of each jaw and apply pressure on them towards the center of the chuck. Turn camlock key clockwise and make sure all jaws engage the spiral mechanism.

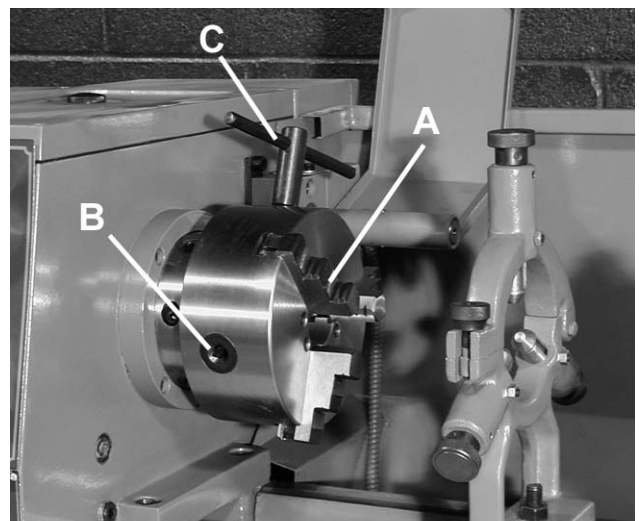


FIGURE 9

## Installing and operating follow rest and steady rest

The follow and steady rests serve as workpiece supports during operations. Install the follow rest (A) Fig.10 to the saddle (B) using 2 cap screws. Install the steady rest (C) to the bedway (D) (inbetween the carriage and the chuck) using the clamp shoe, bolt and lock nut assembly.

The follow rest is installed near the cutting tool to give additional support. If the follow rest would not be used, the cutting tool pressure on the workpiece could warp your workpiece and give undesired results.

Position workpiece in the steady rest and the follow rest. Secure workpiece in rests by tightening the centers but do not overtighten.

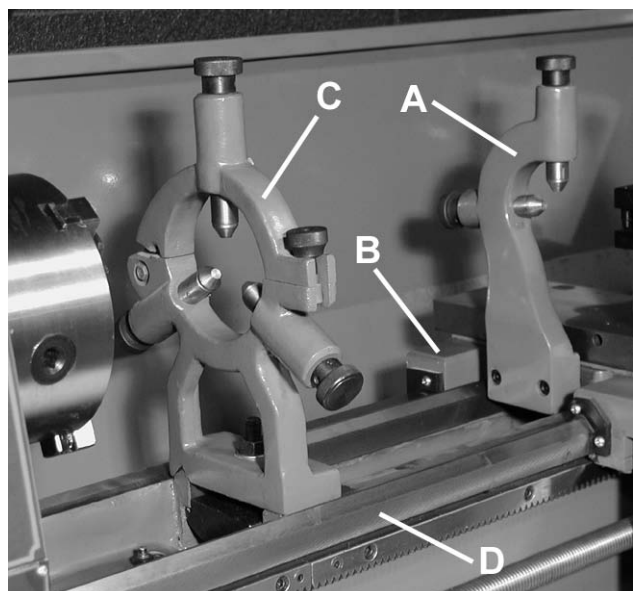


FIGURE 10



# ADJUSTMENTS & OPERATION



## Tailstock Adjustments & Operation

The tailstock can be moved freely on the bedway and fastened at any position by locking tailstock lever (A) Fig.11. The tailstock quill can be moved in and out by using handwheel (B) and then fastened in place using quill locking lever (C). Dead centers or drill chucks are normally installed in the tailstock quill.

An important adjustment and verification must be done in order to obtain the best results using your tailstock. The tailstock must be perfectly aligned with the chuck. Fix a ground steel bar inbetween the chuck center and the tailstock center. Using a precise measuring tool (dial indicators), make sure the distance at both ends of the ground steel bar are the same using the top slide as starting reference point, see Fig.12. If the distance is not the same, then an crosswise adjustment to the tailstock is necessary.

Unlock tailstock lever (A) Fig.11 and adjust set screws (D) on both sides of the tailstock until the distance at both ends of the ground steel bar are the same.

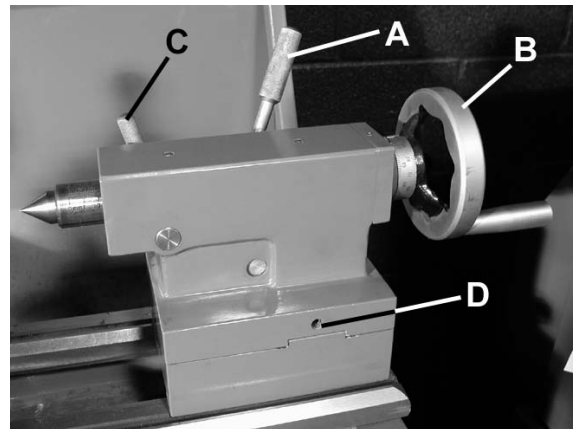


FIGURE 11

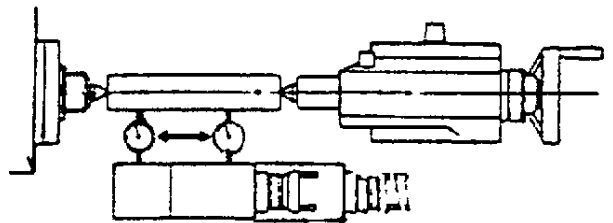


FIGURE 12

## Tool Post Adjustments & Operation

The tool post assembly (A) Fig.13 is used to lock the cutting tool into place at the desired height and angle. The tool post can pivot 360° for various cutting situations. To pivot the tool post assembly, loosen lock nut (B) and pivot tool post, retighten lock nut. The tool post comes with a tool holder (C) which can be adjusted to a desired height using the shaft and nuts mechanism (D) to raise or lower the tool holder. Once the height of the tool holder is determined, use tool post lock handle (E) to lock tool holder in place. The tool holder has 4 locking set screws (F) which lock the cutting tool in place.

## Cross & Top Slide Adjustments & Operation

The cross slide handwheel (A) Fig.14 is used to feed the cross slide, top slide and tool post with cutting tool towards the workpiece. After time the cross slide gib (B) may become loose or too tight and an adjustment may be necessary. To adjust the gib (B), tighten or loosen the flat head bolt (C) until the cross slide moves freely without play.

The top slide handwheel (D) feeds the top slide and tool post with cutting tool towards the chuck or the tailstock end of the lathe. After time the top slide gib may become loose or too tight and an adjustment may be necessary. The top slide can be pivoted to a desired angle, to adjust the angle the top slide simply loosen hex. nuts (E) and set screws (F) on both sides of the top slide base.

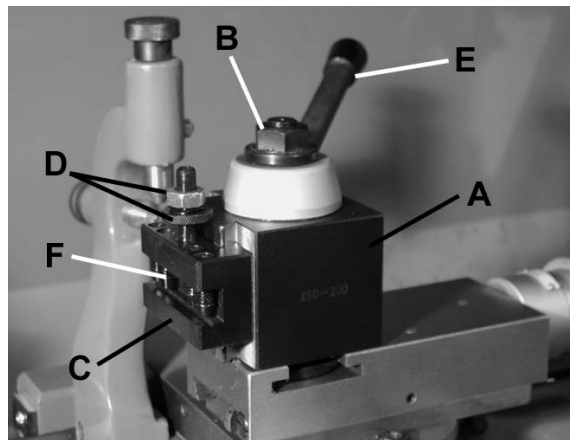


FIGURE 13

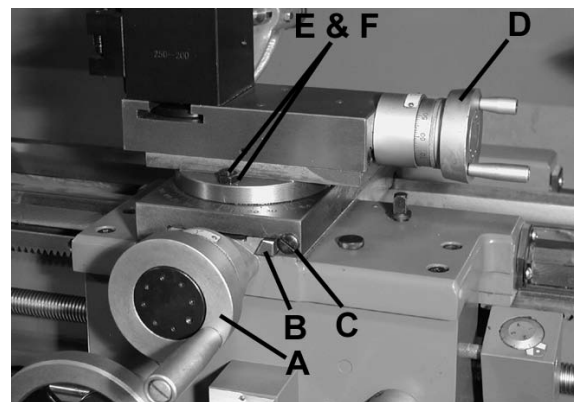


FIGURE 14

## Feed and Thread Selection

To set the desired feed rate and thread selection, look at the charts in Fig's.3 & 6 and determine the feed rate desired in relation to the thread to be cut. Once you have determined the job at hand, place the shifter levers (A & B) Fig.15 in the appropriate positions.

If you desire Metric Threads, the mm change gears must be installed as shown in chart Fig.5 and as described below.

## Metric change gears

To obtain metric threads the proper metric change gears must be installed inside the left side cover. Remove the 2 lock nuts which hold the left side cover to the headstock and then remove the side cover. The large middle gear (A) Fig.16 is the only gear which does not get interchanged. The bottom gear (D) gets replaced with the 60T gear. The top gear (B) can be replaced by the 26T, 27T, 35T, 45T & 50T, the top gear determines the threads per mm.

Before changing gears, determine the threads per mm desired and look at which gear configuration is needed. See "Metric Change Gear" chart Fig.5 as reference. To replace the top gear (B), remove cap screw and washer (C) which hold it in place. Replace with appropriate gear and secure with cap screw and washer. To replace the bottom gear (D), remove gear set screw (E). Replace with 60T gear and secure it to the shaft using the same set screw (E) removed previously. Make sure the shaft key is in place between the gear and the shaft securing gear with set screw. Once the change gears are in place, place the side cover and lock it using the same lock nuts remove previously.

## Automatic Power Feed- Longitudinal or Cross Feed

The power feed lever (A) Fig.17 is used to engage either the longitudinal or cross feed. This lever has a safety interlock to prevent accidental engagement of the half nuts when the lathe is in feed mode. There are 3 positions; the upper position engages the power longitudinal feed, the lower position engages the power cross feed and the center position is the disengaged position.

Make sure the correct gear configuration is set as shown in "Feed Rate" chart Fig.3. Place the feed/thread selector to ANY position and make sure the thread cutting engagement lever (B) is disengaged before operating.

## Thread Cutting Operation

In order to obtain the desired thread, all change gears must be installed in accordance to the thread charts. Failure to do so will give incorrect threads.

Move the thread cutting engagement lever (B) Fig.17 downwards, this will make it engage with the leadscrew for longitudinal travel of the carriage. Make sure the power feed lever (A) is disengaged (in neutral position) before operating the thread cutting engagement lever (B), note: a safety interlock prevents accidental engagement of the half nuts when the lathe is in feed mode.

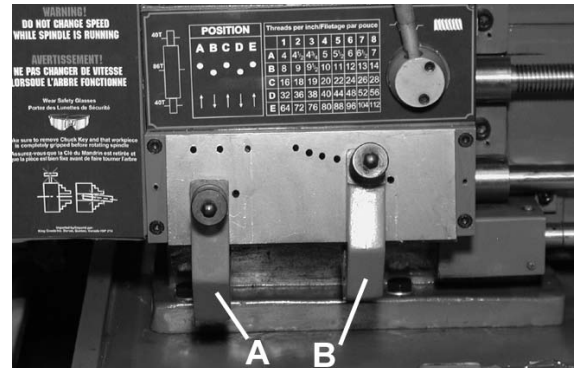


FIGURE 15

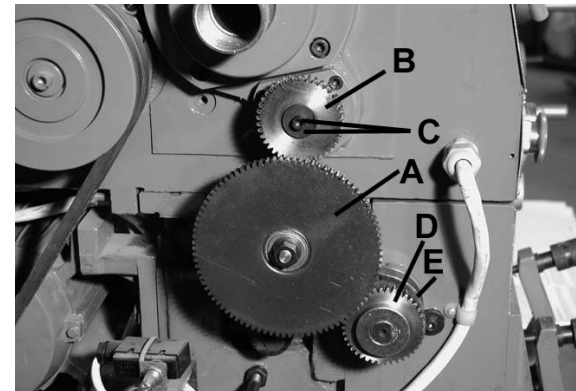


FIGURE 16

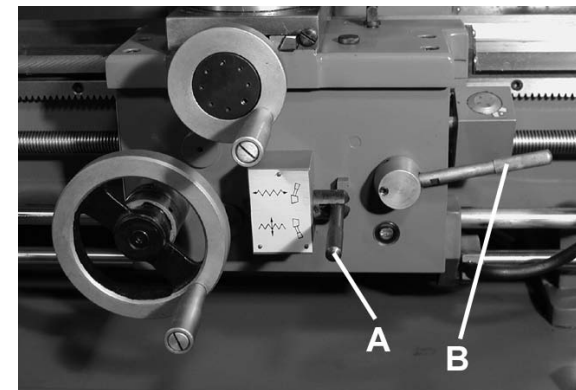


FIGURE 17

## Thread Cutting Dial Operation

The thread cutting dial is used to engage the half nuts with the leadscrew in the same thread that has been previously cut. Please note: Use any line of the dial for even pitches of threads, but for odd pitches of threads you must use the same starting line.

Example: When cutting a shaft with 10 T.P.I., engage the half nuts at any number on the thread dial, when creating an odd pitch, if you start the cut using 1 or a 3, continue to use the 1 or the 3 until the thread is finished. See Fig.7.

# LIST OF MAIN GEARS, LEADSCREWS AND NUTS



### Headstock Gears

ID#	Description	No. of Teeth
1	Gear	42
2	Gear	23
3	Gear	51 (47)
4	Gear	36
5	Gear	55
6	Gear	27 (31)
7	Gear	50 (45)
8	Gear	65 (58)
9	Gear	21
10	Gear	45
11	Gear	54 (59)
12	Gear	39 (46)
13	Gear	83
14	Paired Gear	45
	Gear	40
15	Paired Gear	40
	Gear	45

### Gear Box Gears

ID#	Description	No. of Teeth
16	Paired Gear	32
	Gear	16
17	Paired Gear	32
	Gear	16
18	Gear	16
19	Gear	32
20	Gear	16
21	Gear	16
22	Gear	18
23	Gear	19
24	Gear	20
25	Gear	22
26	Gear	24
27	Gear	26
28	Gear	28
29	Gear	24
30	Gear	24
31	Gear	15
32	Gear	16
33	Gear	32
34	Gear	24

### Apron Gears, Screws, Nuts

ID#	Description	No. of Teeth
35	Gear	11
36	Rack	-
37	Leadscrew	Single thread
38	Half Nuts	Single thread
39	Worm	Single thread
40	Worm Gear	24
41	Gear	12
42	Gear	50
43	Pinion	25
*44	Nut	Single thread
45	Screw	Single thread
46	Gear	14
47	Gear	51
48	Gear	13
49	Gear	25
50	Gear	48
51	Screw	Single thread
52	Screw nut	Single thread

\*Left handed thread  
\*\*2 piece gear

### Tailstock Screw & Nut

ID#	Description	No. of Teeth
*53	Screw	Single thread
*54	Nut	Single thread

### mm Change Gears

ID#	Description	No. of Teeth
-	Gear	**40
-	Gear	25
-	Gear	26
-	Gear	43
-	Gear	46
-	Gear	47
-	Gear	60
-	Gear	80

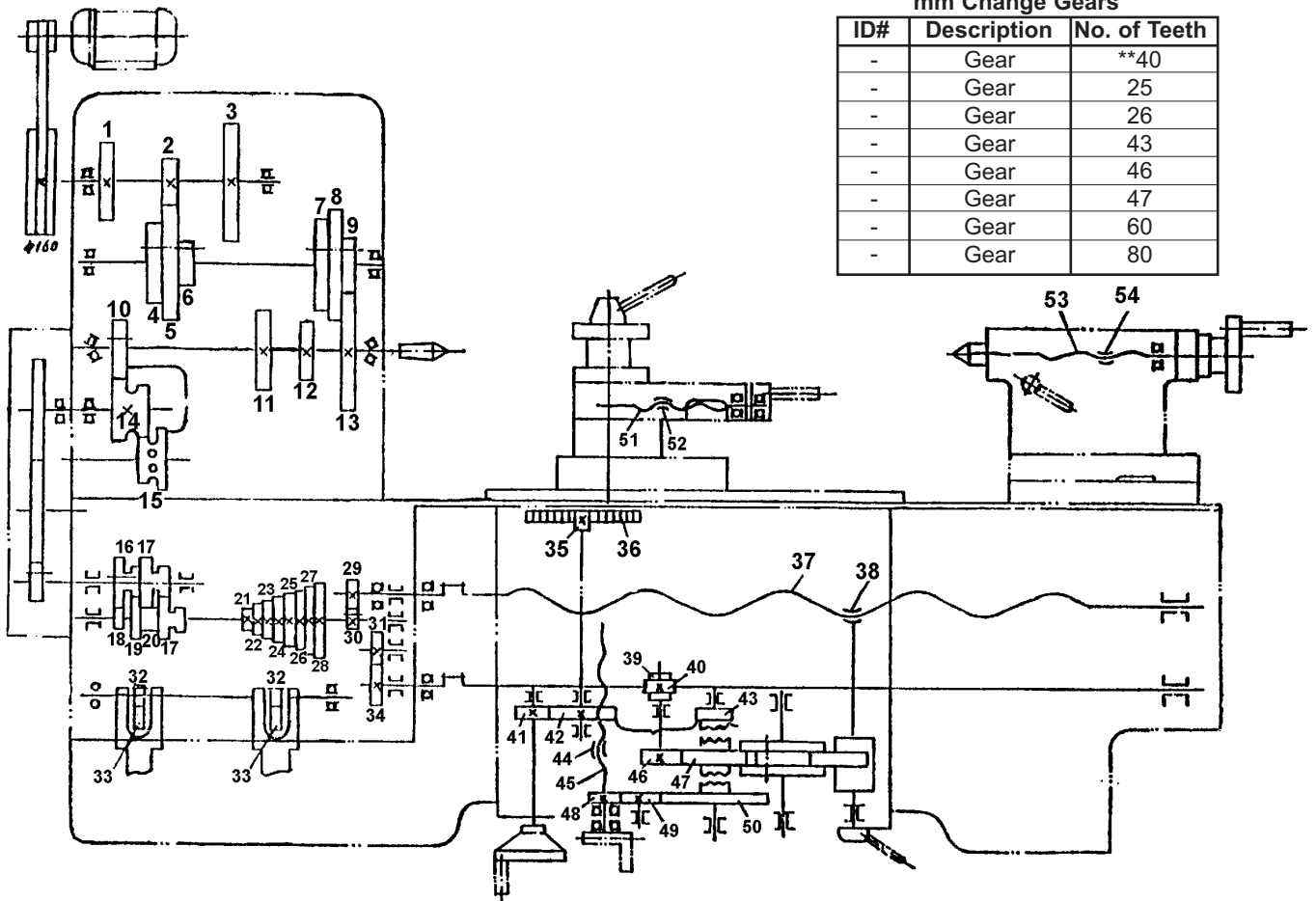


FIGURE 18

# LIST OF BEARINGS

Bearings List

ID#	Location	Qty
1	Headstock	2
2	Headstock	1
3	Headstock	3
4	Headstock	1
5	Gear Box	2
6	Headstock	1
7	Headstock	1
8	Gear Box	3
9	Carriage	2
	Tailstock	1
10	Carriage	2
11	Change Gear	1

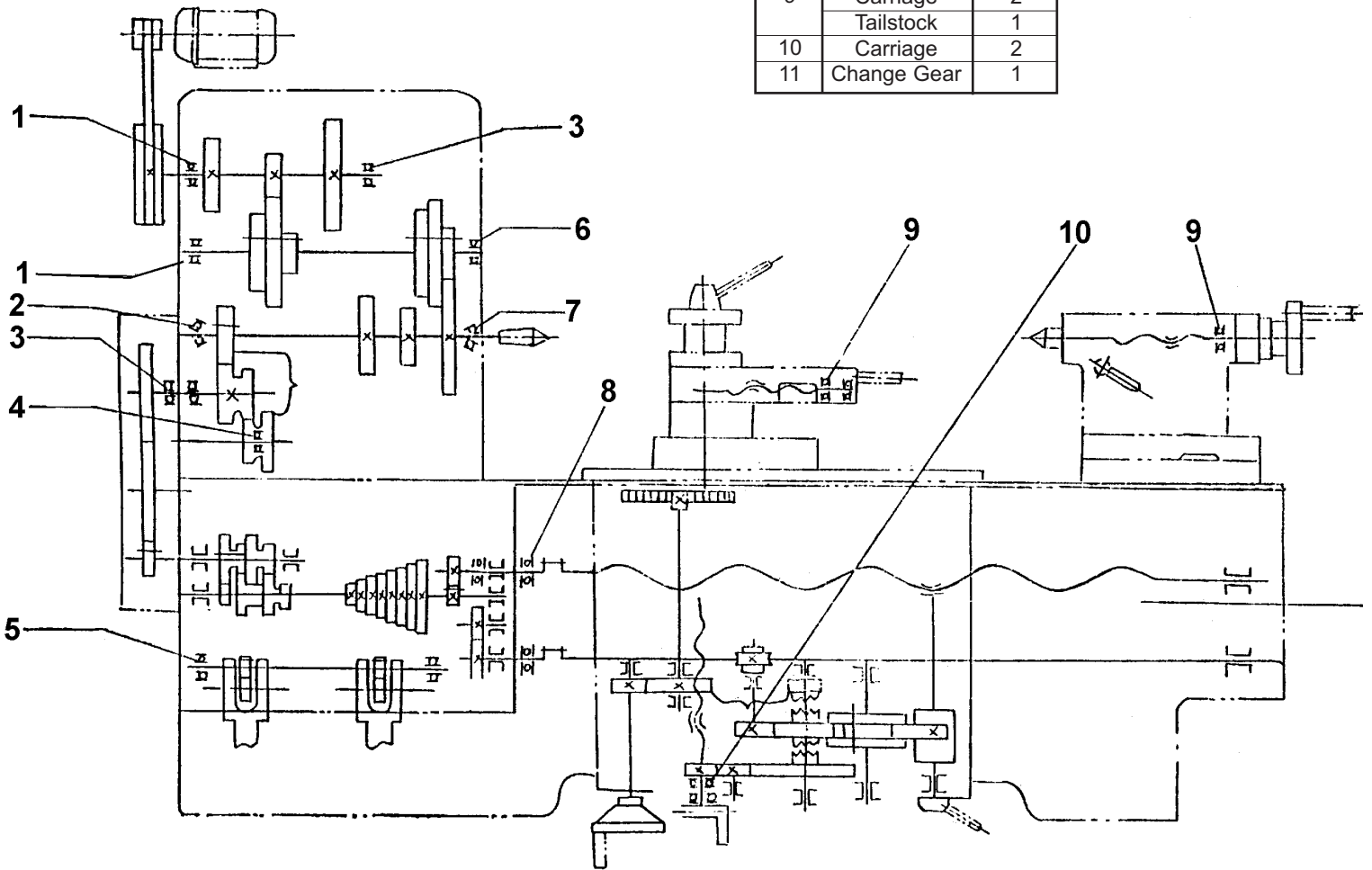


FIGURE 19

# LUBRICATION POINTS



**Before operating the metal lathe,** check the oil level and lubricate all sliding surfaces such as the dovetail slot, half nut, worm gear, leadscrew, feed rod, handle rod, tailstock quill before and after operating. Follow the main lubrication points illustrated below.

## Lubrication Notes

Note: Headstock lubrication point (1). After running for the first 3 months, change the oil. Change oil once a year after first initial oil change. Drain oil and then open top cover and fill oil until it reaches the 3/4 mark on the oil level indicator. The bearings should be completely immersed in oil.

Apron lubrication point (4). The apron is filled with Shell Tellus 32 through the filling plug on the side of the apron. Oil level should be checked regularly. Change oil after the first 3 months and once every year after.

Gear Change lubrication point (3). Lubricate the change gears with thick machine oil or grease once a month.

A light oil should be used on the bedway and all other reflective parts like the tailstock quill.

## Lubrication Points

Headstock lubrication point (1).  
Gear Box lubrication points (2 & 5).  
Gear Change lubrication point (3).  
Saddle lubrication point (4).  
Carriage lubrication points (6).

Handwheel lubrication point (7).  
Leadscrews & Bracket lubrication points (8).  
Tailstock lubrication point (9).  
Tool Post Slide lubrication point (10).  
Top slide set screw lubrication point (11).

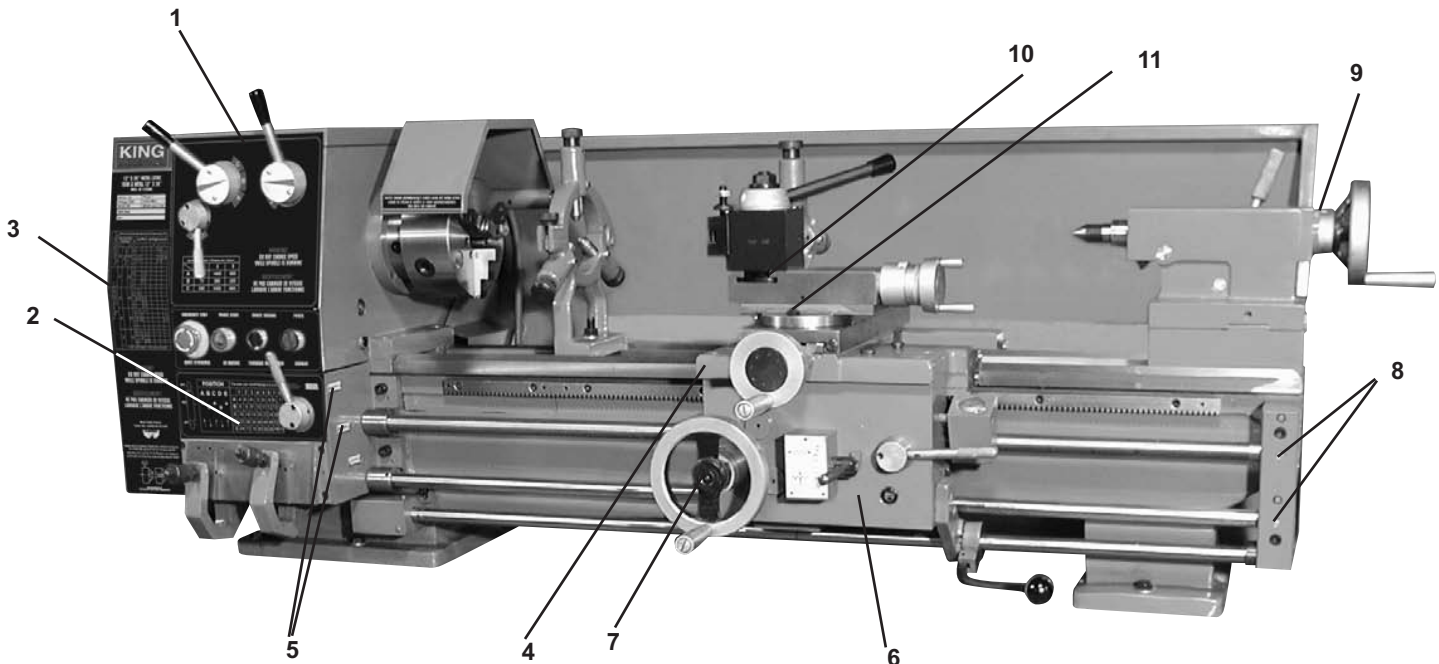


FIGURE 20

## PARTS DIAGRAM & PARTS LISTS

Refer to the Parts section of the King Canada web site for the most updated parts diagram and parts list.