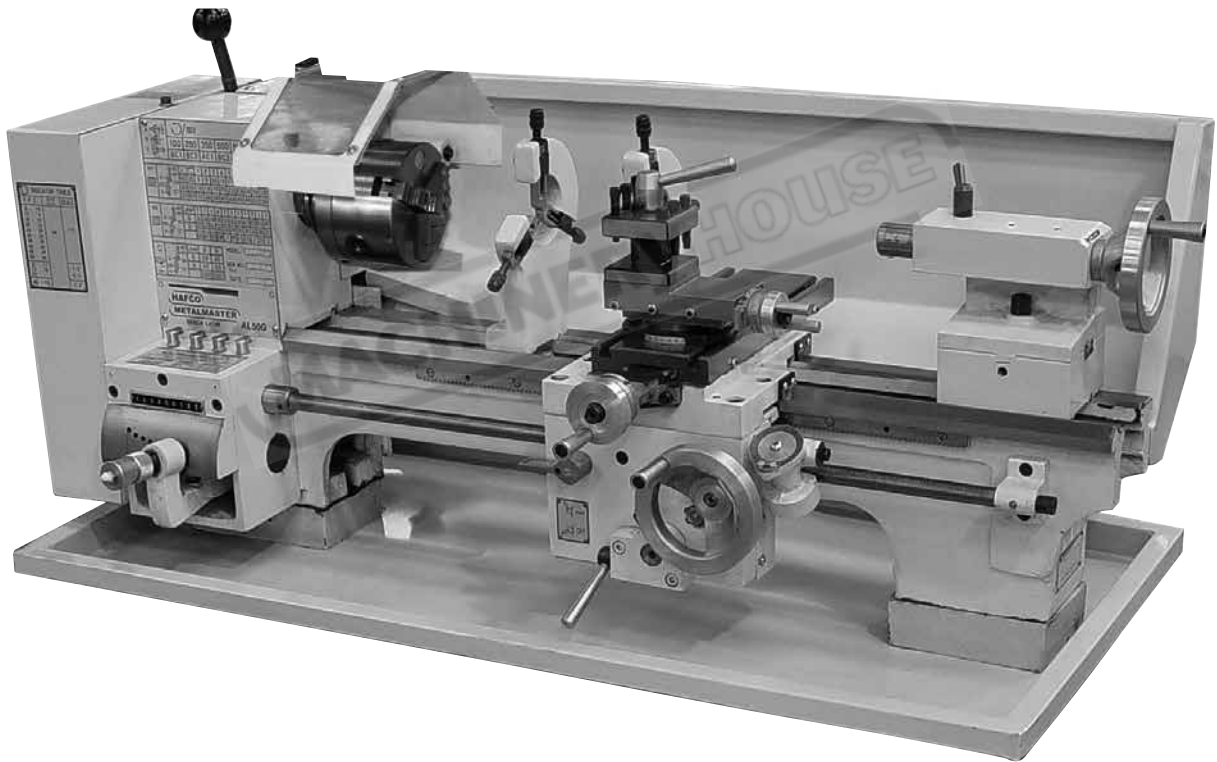


INSTRUCTION MANUAL

AL-50GA Bench Lathe (240V) 230 x 500mm



GENERAL SAFETY RULES FOR POWER TOOLS

WARNING-DO NOT ATTEMPT TO OPERATE UNTIL YOU HAVE READ THOROUGHLY AND UNDERSTAND COMPLETELY ALL INSTRUCTIONS,RULES,ETC,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-PARTY 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 ADJUSTING 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

Clutterd areas and benches invite accidents.

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 KID PROOF

With padlocks,master switches,or by removing starter keys.

9.DON'T FORCE TOOL

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

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(ANSI approved)

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

13.SECURE WORK

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

14.DON'T OVERREACH

Keep your proper footing and balance at all time.

15.MINTAIN 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,bits,cutters,or when mounting and re-mounting 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 TOOL

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

20.CHECK DAMAGED PARTS

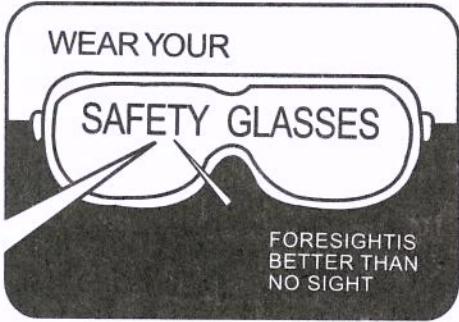
Before further use of the tool,a guard of other part that is damaged should be carefully checked of ensure that it will operate properly and perform its intended function-check for alignment of moving parts,binding of moving parts,breakage of parts,mounting,and any other conditions that may affect its 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.



WEAR YOUR
SAFETY GLASSES

FORESIGHT IS
BETTER THAN
NO SIGHT

The operation of any power tool can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields before using your Lathe. we recommend Wide vision Safety Mask for use over spectacles. 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. (ANSI approved)
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 cutting 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 FAMILIARITY (GAINED FROM FREQUENT USE OF YOUR LATHE) TO BECOME COMMONPLACE. A CARELESS FRACTION OF A SECOND CAN ALLOW FOR SEVERE INJURY.

INDEX

Standard equipment	6
Technical data	7
Setting up and preparing for operation of the machine	7
General description	8
Lathe bed	8
Headstock	8
Slides	9
Apron	9
Tailstock	10
Leadscrew	10
Gear box	10
Drive and electrical equipment	10
Controls	11
Working with the lathe	12
Setting the turning tool	12
Manual turning	12
Longitudinal turning with auto-feed	12
Taper turning using tailstock set-over	13
Taper turning by setting the top slide	13
Turning between centers	13
Screw cutting	14
Example of mounting the gear wheels	14
Slipping clutch	14
Thread cutting table	15
Lathe accessories	16
Universal lathe chuck, 3 or 4 jaw design	16
4-Jaw independent chuck	16
Drill chuck	16
Morse taper arbor	16
Live center	16
Center steady rest	17
Travelling steady rest	17
Setting the steady rest	17
Tool post	18
4-Way tool post	18
Chip guard	19
Gear change lathe	19
Cabinet stand	19
Bearings and slide adjustment	20
Adjustment of main spindle bearings	20

INDEX

Adjustment of cross and top slides	20
Adjustment of feed screw end float	20
Feed screw backlash adjustment	20
Cross slide spindle	20
Top slide spindle backlash adjustment	21
Adjustment of half-nut guide	21
Adjustment of leadscrew backlash	21
Replacing the shear pin in the leadscrew	21
Re-position the v-belt	22
Lubrication plan	23
Head stock	24
Drive	26
Tensioning roller	28
Quadrant	30
Drive and electrical equipment	32
Lathe bed	33
Gear box	34
Apron	36
Saddle and cross slide	40
Top slide	42
Tail stock	44
Center steady rest	46
Traveling steady rest	47
Wiring diagram	48

The Standard Equipment Includes.

Bed

Headstock

Saddle,Cross,Top-Slides

Tailstock

Reduction gear

Automatic feed with quadrant and 6 change wheels

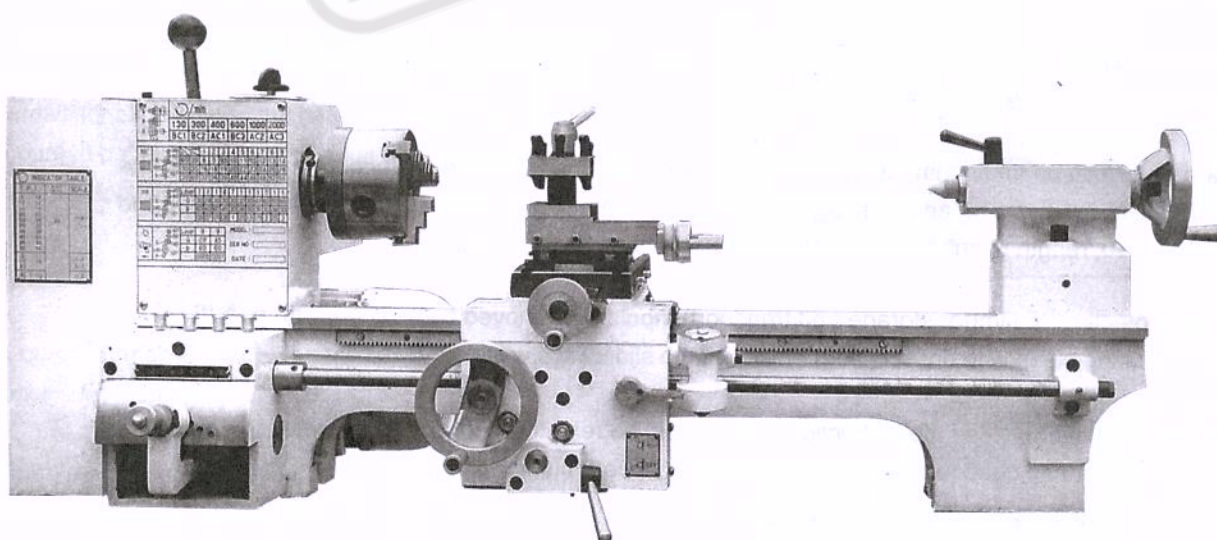
Center MT-3

Center MT-2

Single tool holder(Clamp)

Electrical equipment with motor etc.

Service manual



TECHNICAL DATA OF THE LATHE

Center height	115mm(4-1/2")
Distance between centers	500mm(20")
Max.dia.over slide	68mm(2-5/8")
Required.floor space	950 x 500mm(37-1/2" x 20")
Weight	95kg(210Lbs)

Headstock:spindle nose morse taper No.3
 hollow spindle(inside dia.)20mm(3/4")
 spindle bearings:2 adjustable precision taper roller bearings.#32007

Spindle speeds:130,300,400,600,1000,2000 rev/min(60Hz)

100,250,350,500,900,1800 rev/min(50Hz)

Feed with Leadscrew:0.127mm/rev(0.005"/rev)

0.177mm/rev(0.006"/rev)

Thread pitches: metric 0.5-3mm

inch 8-56 thread/inch.

Tailstock: spindle dia.26mm(1")

spindle travel 40mm(1-5/8")

morse taper MT-2

Motor: speed 1720 rpm(60Hz),1500(50Hz)

capacity 3/4 HP

SETTING UP AND PREPARING FOR OPERATION OF THE MACHINE

To avoid twisting of the bed,care should be taken that the location to which the machine is bolted is absolutely flat and level.

Care must also be taken that the stand on which the machine is mounted is securely fastened to the floor,thus avoiding swing and working inaccuracies,the machine should be fixed with 2 hex-headed screws(M10,1length to suit the thickness of base)firmly onto the stand.

The protecting oil film(for storage and transport)should be removed by washing with paraffin. After washing, clean with dry, soft cloth. Finally oil the slide ways with caid-free oil.

Before using the machine,the instruction book should be read throughly by its operator so that this completely familiar and confident with the machine and its controls.

GENERAL DESCRIPTION

Lathe Bed

The lathe bed is made of high-grade cast iron(FCD-25) By Combining high cheeks with strong cross ribs,a bed with low vibration and rigid qualities is produced.The two precision-ground v-slideways,re-enforced by precision heat-hardening and grinding,give an accurate guide for the carriage and tailstock,the main drive motor is mounted to the rear of the bed,

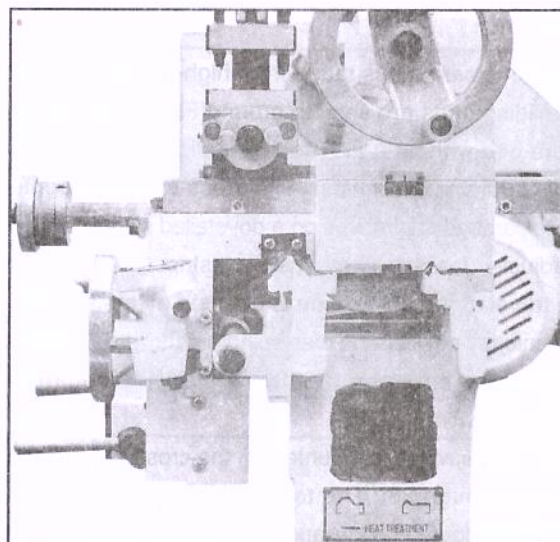


Fig.1

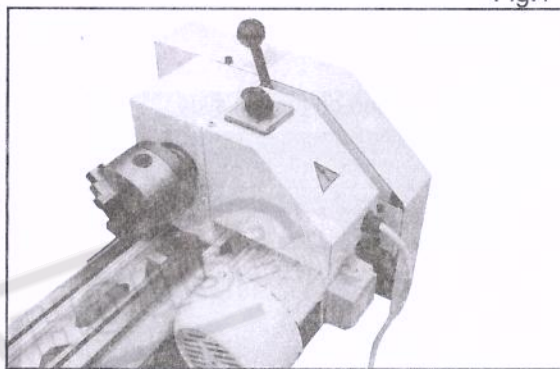


Fig.2

Head Stock

The headstock is cast from high-grade low-vibration cast iron,it is bolted to the bed by 4 screws with 4 Adjusting screws for alignment.In the head,the large main spindle is mounted on 2 precision taper roller bearings(#32007) The hollow spindle has a 3 MT with A 20mm bore.

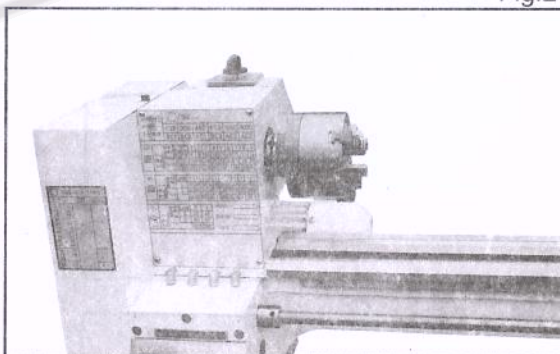


Fig.3

A quick change of the belt can be made by easing the tension on the idler.

The type of belt used by lathe has the great advantage that it is noiseless at all speeds.

To protect the machine against accidental damage A clutch is fitted to the reduction pulley for the 120 rpm speed.

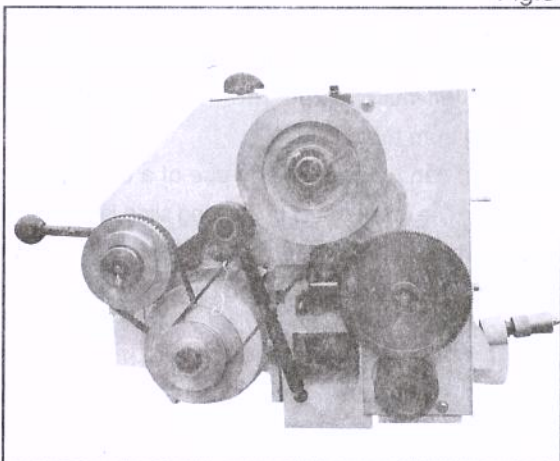


Fig.4

Slides

The strong carriage is made from high-quality cast iron. The sliding parts are smooth ground (Fig.1) It fits the vee on the bed without play. The lower sliding parts can be easily and simply adjusted. The cross-slide is mounted on the carriage and moves on a dovetailed slide which can be adjusted for play by means of gibstrips.

The travel of the cross slide is effected by means of the conveniently positioned cross spindle handwheel. There is a graduated collar on the handwheel (1 graduation = 0.0254mm)

The top slide, which is mounted on the cross slide, can be rotated through 360°. The top slide and the cross slide travel in a dovetail slide and have gibs, adjustable nuts and a graduated collar (1 graduation = 0.0254mm).

A strong clamp is fitted on the top slide.

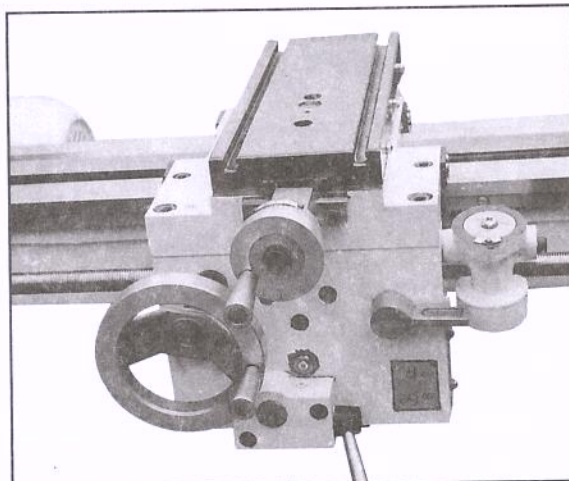


Fig.1

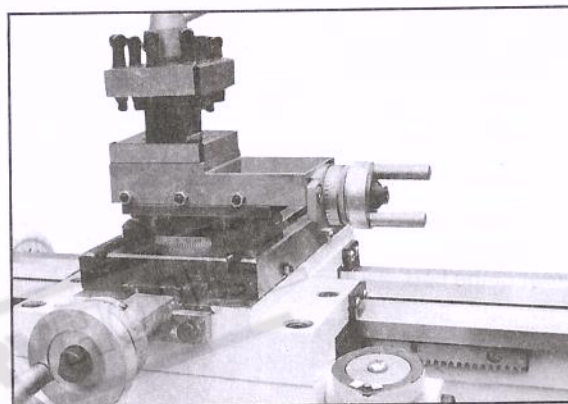


Fig.2

For accurate facing operations the carriage can be locked by tightening hex head screw (c). (Fig.3)

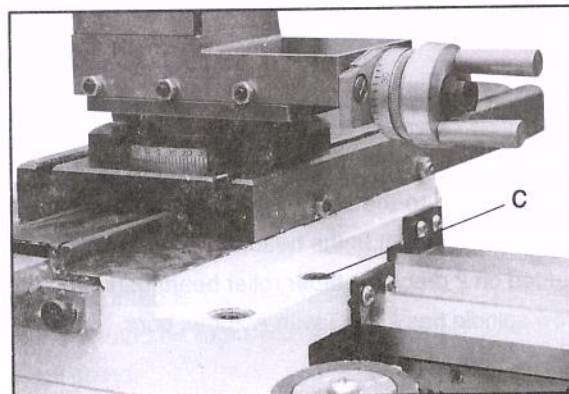


Fig.3

Apron

The apron is mounted on the long slide, in the apron the tow-piece half-nut is fitted. The half-nut guides can be adjusted from the outside.

The half-nut can be engaged by use of a conveniently placed lever. The quick-travel of the long slide is by means of a rack which is mounted on the bed, and a pinion, operated by a handwheel mounted on the carriage within easy reach.

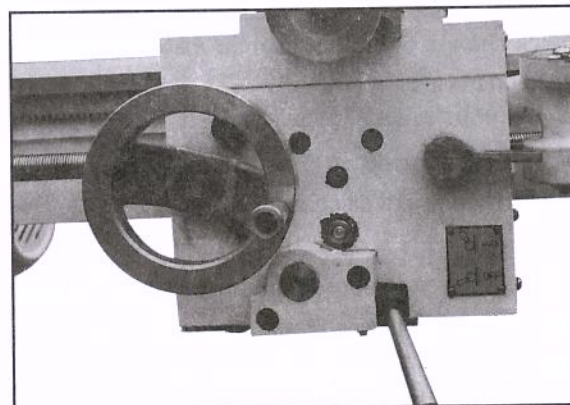


Fig.4

Tailstock

The tailstock slides on a vee and can be clamped in any position by means of a heavy screw(Fig.1).The tailstock has a heavy-duty barrel with No 2 Morse Taper socket and a graduated scale.The barrel can be clamped in any position by means of a clamping lever.The barrel is moved axially by means of a handwheel mounted on the rear end of the tailstock.

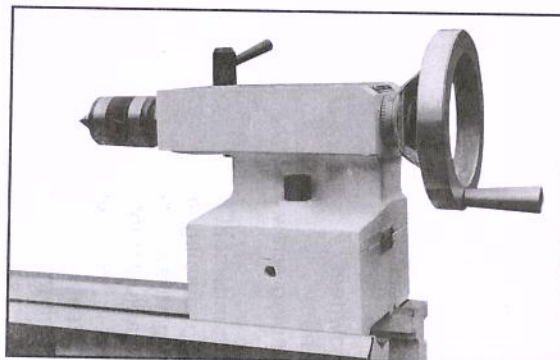


Fig.1

Leadscrew

The leadscrew is mounted on the front of the machine bed.It is connected to the gear box at the left for auto-matic feed and is supported by bearings on both ends. The nut and set screw on the right end are to take-up play on lead screw.(Fig.2)

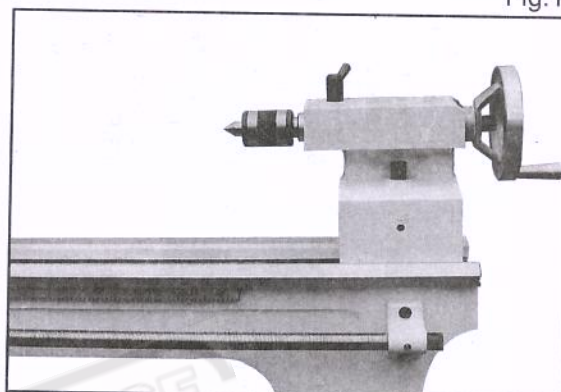


Fig.2

Gear Box

Gear box is made from high-quality cast iron,mounted on the left side of machine bed.The motor will drive through 9 changable speeds.Always raise idler to the proper position when changing speeds(Fig.3)

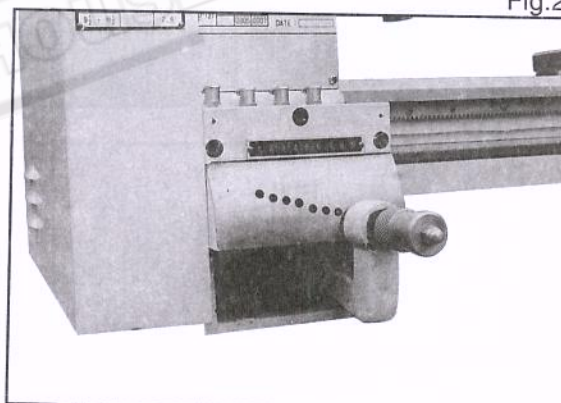


Fig.3

Drive and Electrical Equipment

The main drive is by a single phase A.C.motor, mounted on the rear of the lathe bed. The auto-switch is mounted on the top of the box.The motor condenser is also contained in the box.(Fig.4)

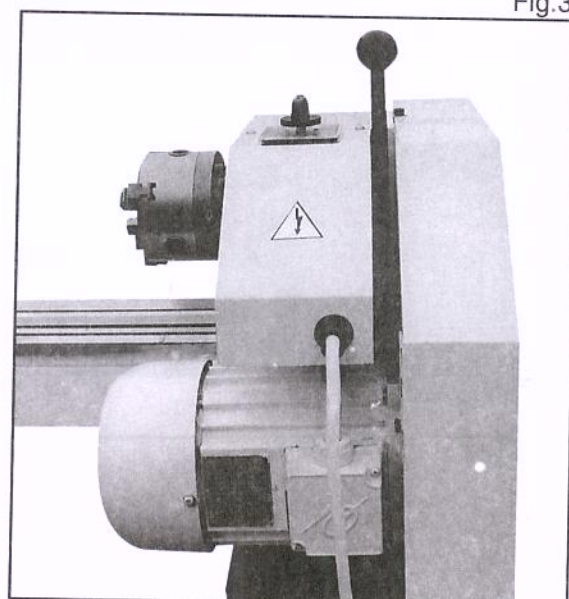
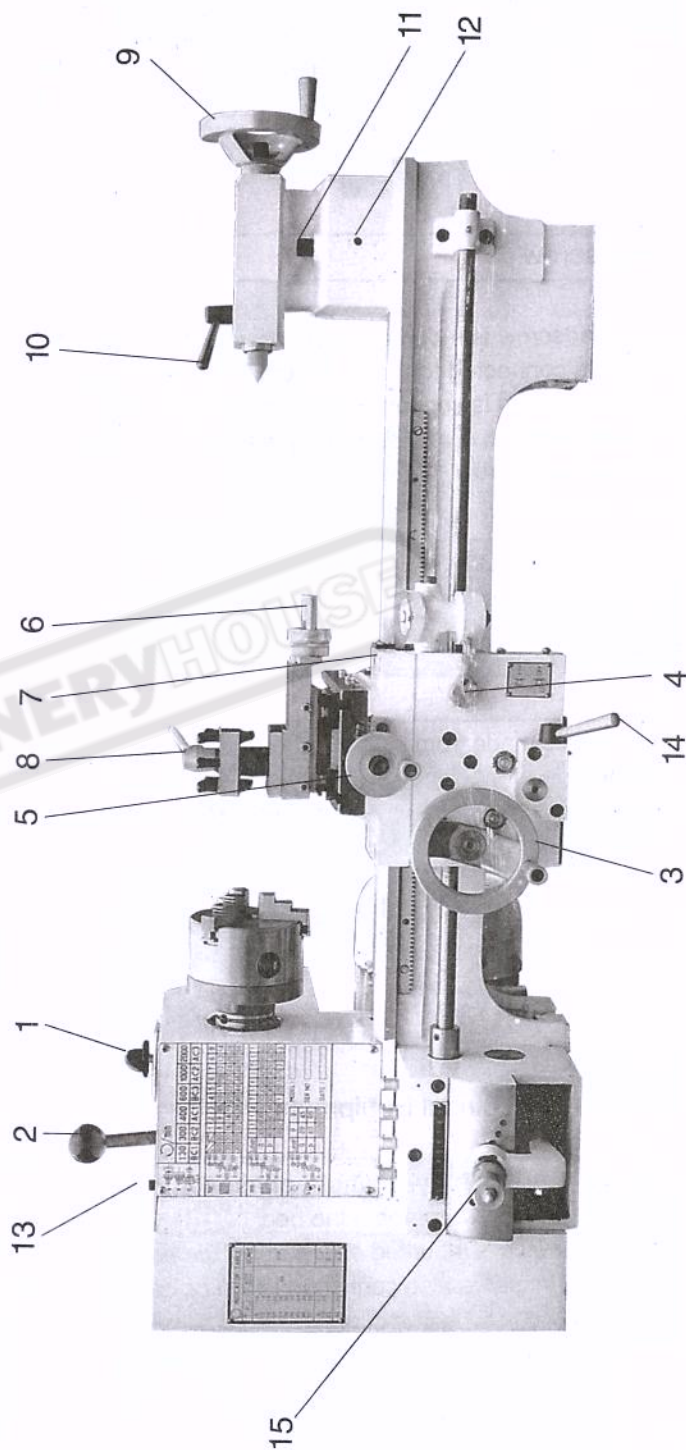


Fig.4

CONTROLS

1. Main switch for motor (forward and reverse)
2. Lever for adjusting tension of the Vee belt
3. Long travel handwheel
4. Half-nut lever
5. Cross slide handwheel
6. Top side handwheel
7. Long travel clamping screw
8. Tool clamp
9. Tailstock barrel handwheel
10. Tailstock barrel clamping lever
11. Tailstock locking screw
12. Tailstock cross adjustment
13. Fixing screw for drive cover
14. Automatic feed lever
15. Gear box quick change lever



WORKING WITH THE LATHE

Setting the Turning Tool

The cutting angle is only correct when the cutting edge is in line with the center axis of the work piece. The correct height of the tool can be achieved by comparison with the point of the center mounted in the tailstock. The correct height can be obtained by using shims under the tool. (Fig.1)

When turning, the tool has a tendency to bend under pressure. For the best results, the overhang should be kept to a minimum of 10mm.

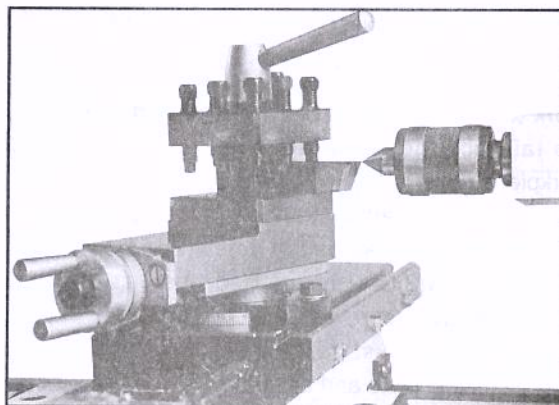


Fig.1

Manual Turning

The long travel, cross travel, top slide-handwheels can be operated for longitudinal or cross feeding (Fig.2)

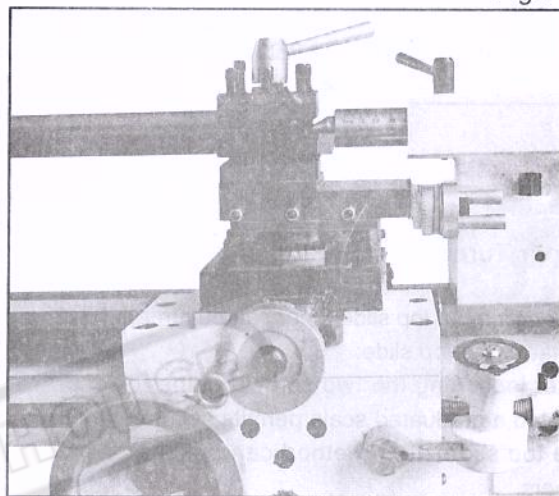


Fig.2

Longitudinal Turning with Auto-Feed

Two automatic feeds are available (rough=0.007"/rev, fine=0.005"/rev) these can be obtained by altering the gear wheel combinations (see table). (Fig.3)

By moving Lever(A) downward and the automatic feed is in operation. (Fig.4)

	Lever	9	9
	a	28	45
	b	60	60
		0.005	0.007

Fig.3

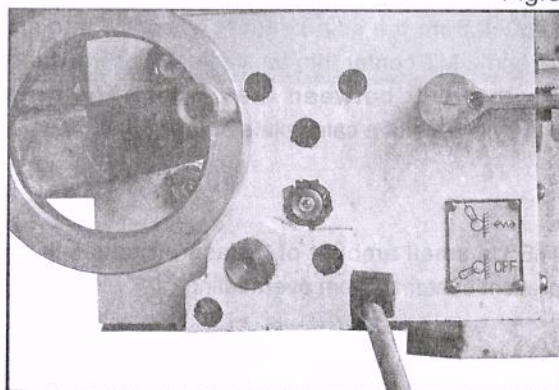


Fig.4

Taper Turning Using Tailstock Set-Over

Work to a side angle of 5° can be turned by setting over the tailstock (the angle depends on the length of the workpiece) (Fig.1)

To set over the tailstock, slacken the locking screw (1) unscrew the front adjusting screw (2) screw in the rear adjusting screw (3) Until the required taper has been reached tighten the front screw to lock the tailstock in position. The workpiece must be held between two centers and drive by driving plate and driver.

After taper turning, the tailstock should be returned to its original position. The zero position of the tailstock is checked by turning a test piece with constant adjustment until the piece is absolutely cylindrical.

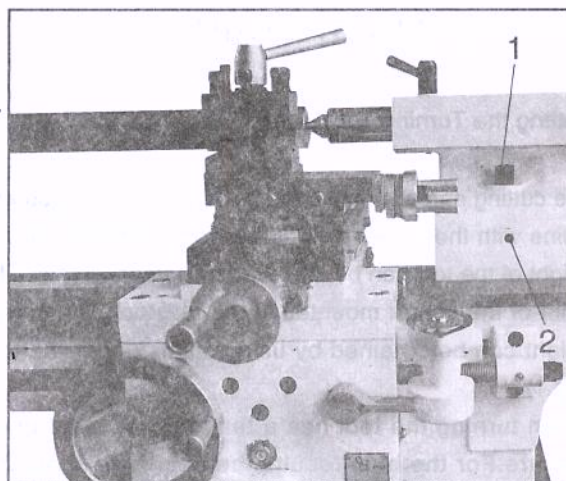


Fig.1

Taper Turning By Setting The Top Slide

By angling the top slide, taper can be turned. (Fig.2)

Rotating the top slide:

After loosening the two screws (1), the top slide can be rotated, a graduated scale permits accurate adjustment of the top slide. This method can only be used for short tapers.

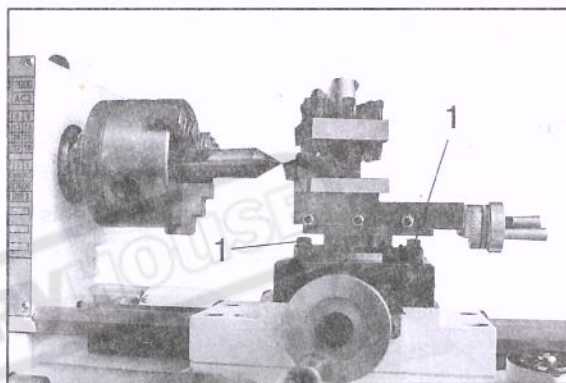


Fig.2

Turning Between Centers

For turning between centers it is necessary to remove the chuck from the spindle. Fit MT3 center into spindle nose and 2 MT center into tailstock. Mount workpiece fitted with driver between the centers. The driver is driven by means of a catch plate or face plate.

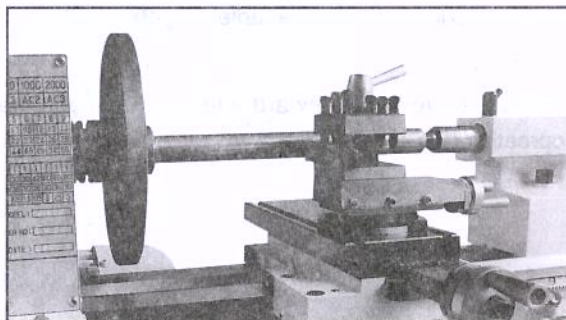


Fig.3

NOTE: Use a small amount of grease on tailstock centre to prevent center tip from overheating.

Screw Cutting(With Change Gear)

By changing the combination of gear wheels, it is possible to cut metric and inch threads. Please refer to the table when changing and be sure that as an aid in mounting that a strip of paper be placed between the meshing teeth. For inch threads please refer to the thread cutting table (Fig.4)

It is essential that the half-nut should remain closed throughout the threading operation so that the tool always returns to the correct starting position. The tool should be withdrawn by use of the cross slide and the carriage returned to the starting position by reversing the motor.

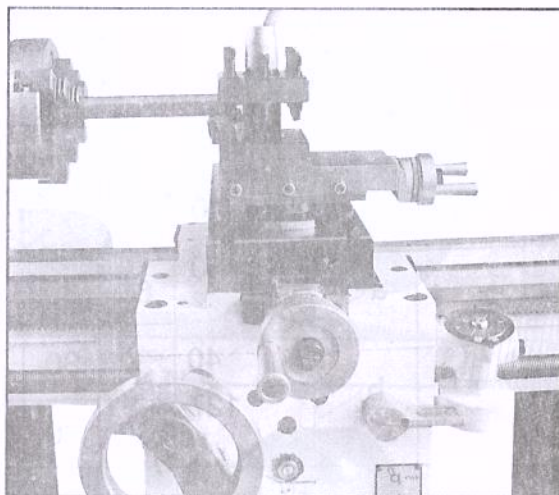


Fig.1

Example of Mounting the Gear Wheels for 10 Thread/Inch

1. Loosen the screw 1. (Fig.3)
2. Loosen bolt (2), remove washers (3) and bushing (6).
3. Loosen nut (7) to the set position.
4. Loosen nut (5) remove washer (4) and gear (8).

Assembling Gear Wheels

1. Set gear wheel (30 teeth) and bushing down below.
2. Set gear wheel (60 teeth) on upside.
3. No change with middle gear wheel.

Be sure that all nuts are tight when assembling

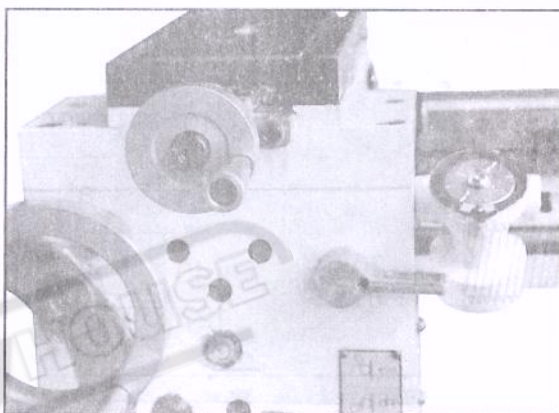


Fig.2

Slipping Clutch

To avoid the overloading of the drive, a safety-slipping clutch is fitted on the position of speed 120 RPM. Overloading the drive (rattling noise) means the depth of cut is too deep and should be reduced.

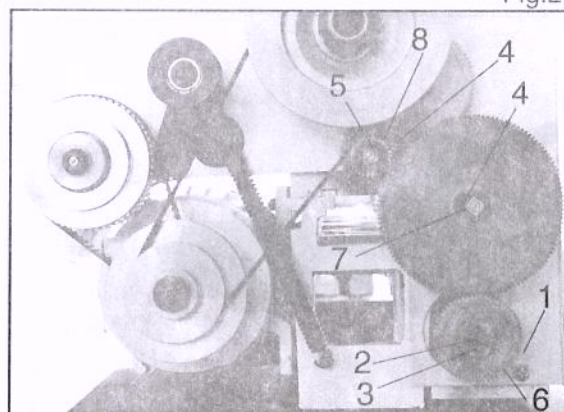
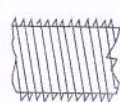
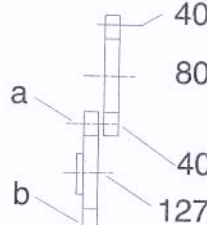


Fig.3

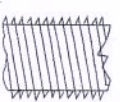
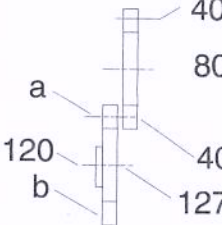
INDICATOR TABLE		
T.P.I.	WORM GEAR	SCALE
8 10	64	1-8
12 14		
16 18		
20 22		
24 26		
28 32		
36 38		
40 44		
46 48		
52 56		
9 11	64	1,3
13 19		5,7
23		2,6
$9\frac{1}{2}$ $9\frac{1}{2}$		

Thread Cutting Table

INCH

$n/1''$ 		Lever		1	2	3	4	5	6	7	8	9	
		a	b										
		60	30	8	9	9.5	10	11	11.5	12	13	14	
		30	30	16	18	19	20	22	23	24	26	28	
		30	60	32	36	38	40	44	46	48	52	56	

METRIC

$n/1''$ 		Lever											
			7	1	1	4	7	1	1	1	7	1	1
		a	30	28	30	30	30	30	30	42	60	60	60
		b	60	60	60	45	30	36	30	36	30	36	30
			0.5	0.7	0.75	0.8	1	1.25	1.5	1.75	2	2.5	3

MACHINERY

LATHE ACCESSORIES

Universal Lathe Chuck, 3 or 4 Jaw Design

Using these universal chucks, cylindrical or symmetrically profiled work pieces (Round stock, triangular, square, hexagonal, octagonal or twelve-cornered stock) can be clamped (Fig.1)

Note: New lathe chucks have very tightly fitting jaws this is of vital necessity to ensure accurate clamping and a long service life. With repeated opening and closing, the jaws adjust themselves automatically and their operation becomes progressively smoother.

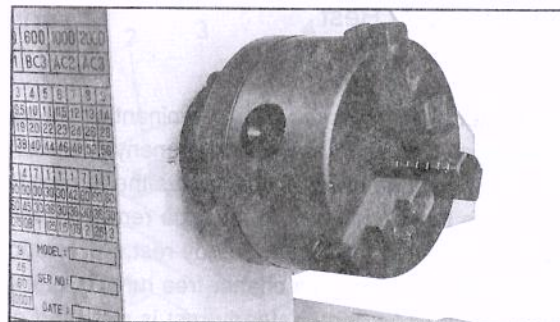


Fig.1

4 Jaw Independent Chuck

This special chuck has 4 independently adjustable chuck jaws. These permit the holding of asymmetrical components and enable the accurate setting up of cylindrical components. (Fig.2)

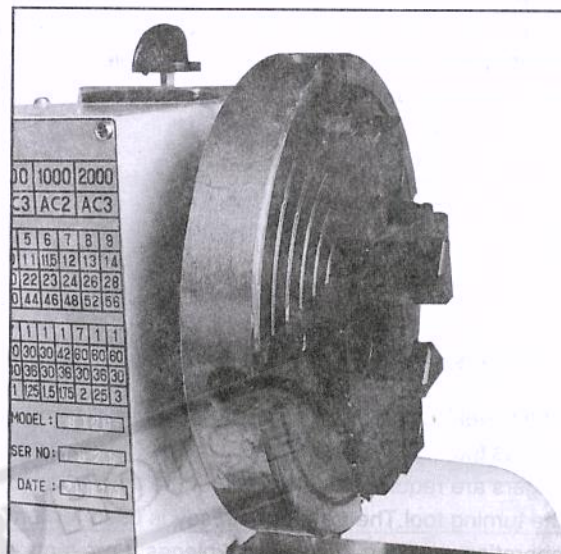


Fig.2

Drill Chuck (Optional)

With its three self centring jaws it is used for holding centering drills and twist drills on The Tailstock (Fig.3)

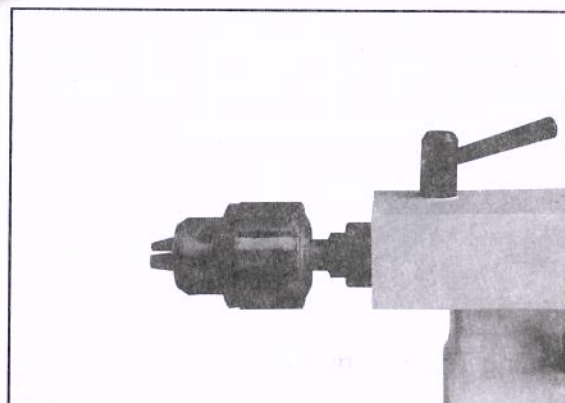


Fig.3

Morse Taper Arbor (Optional)

The arbor is necessary for mounting the drill chuck in the tailstock or vertical attachment spindle, it has a No.2 morse taper (Fig.3)

Live Center (Optional)

The live center is mounted in ball bearings. Its use is highly recommended for turning at speed in excess of 600 RPM. (Fig.4)

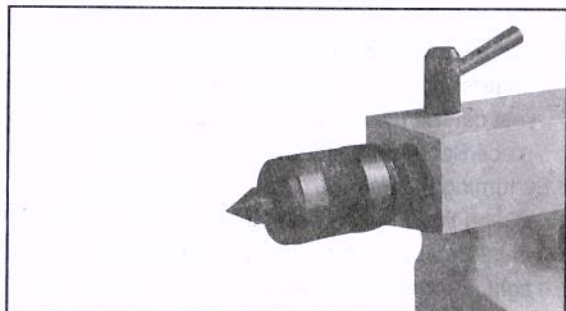


Fig.4

Center Steady Rest

This center steady rest serves predominantly as a support for shafts on the free tailstock end. For many operations the tailstock cannot be used as it obstructs the turning tool or the drilling tool, and therefore must be removed from the machine. It is then the center steady rest, which functions as end support ensuring a chatter-free running of the machine is used. The center steady rest is mounted on the bedway and secured in the desired position by means of a locking plate. The sliding fingers require continuous lubrication at the contact points with the workpiece to prevent their premature wear. (Fig.1)

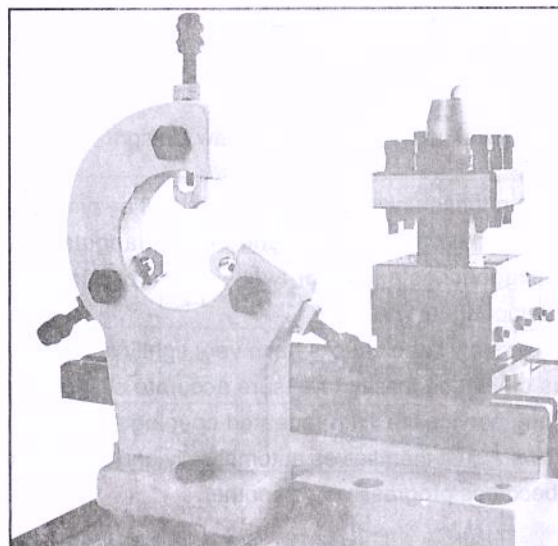


Fig.1

Travelling Steady Rest

The travelling steady is mounted on the saddle and thus follows the movement of the turning tool, only two sliding fingers are required, as the place of the third is taken by the turning tool. The travelling steady is used for turning operations on long, slender workpieces. It prevents "spring" of workpiece under the pressure of the turning tool. (Fig.2)

The sliding fingers are set similarly to those of the center steady, free of play, but not binding, they should be adequately lubricated during operation.

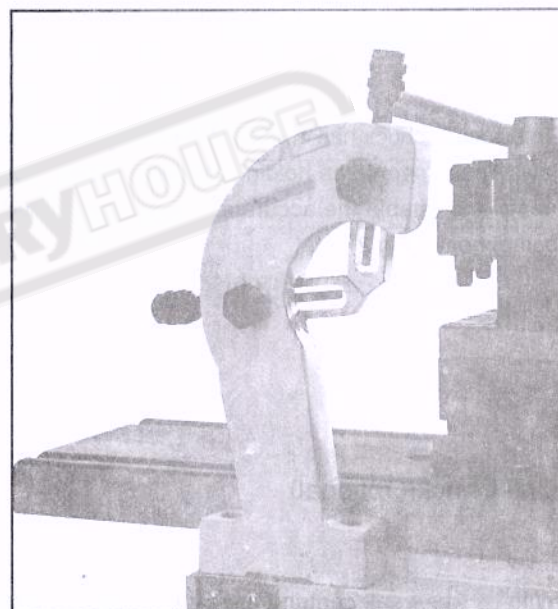


Fig.2

Setting The Steady Rest

1. Loosen the three laterally located hexagonal nuts (1) (Fig.3)
2. Unscrew the knurled screw (3) and open the sliding fingers (2) by hand sufficiently wide until the steady rest can be moved with its fingers around the workpiece. Secure the steady rest in its position.
3. By turning the knurled screws into position, the sliding fingers can be set to the workpiece, they must be applied free of play but must not be too tight. Tighten the hexagonal nuts. Lubricate the sliding points with machine oil.
4. When after prolonged operation time the jaws show wear, the tips of the fingers can be remilled or filed.

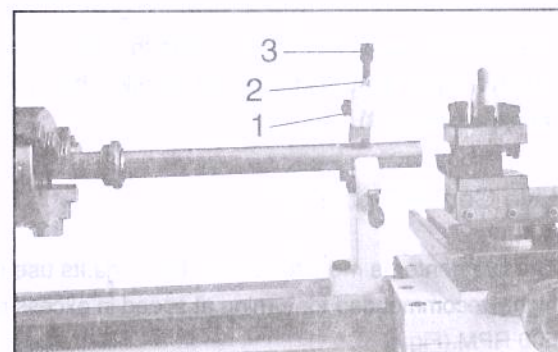


Fig.3

Tool Post

Tool post is mounted on the top slide. The tool(1) can be positioned where desired and then locked in place with 3 point clamp with forked end(2) holding tool. Tighten clamp nut(3) and level(3) point clamp with set screw(4). (Fig.1)

NOTE: Always mount tool cutting edge as close to tool post possible to avoid deflection of tool.

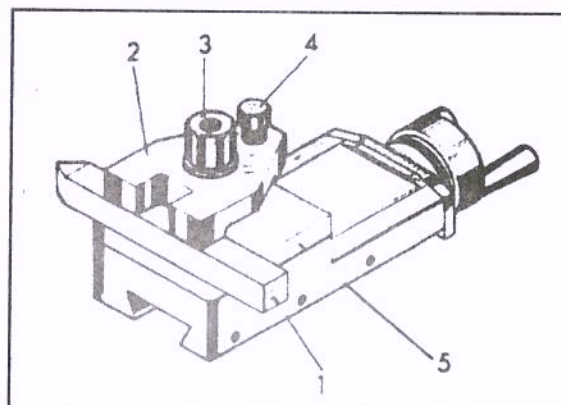


Fig.1

Four-Way Tool Post(Optional)

It is mounted on the top slide and allows four tools to be clamped. Simply loosen the center clamp handle(4) to rotate any of four tools into position(Fig.2)

Use a minimum of two clamping screws when installing cutting tool.

To Install Four-Way Tool Post

Remove standard 3 point clamp and nut, plate 5, (Fig.1) place top plate(1) onto stud, follow with clamp handle (2). (Fig.3)

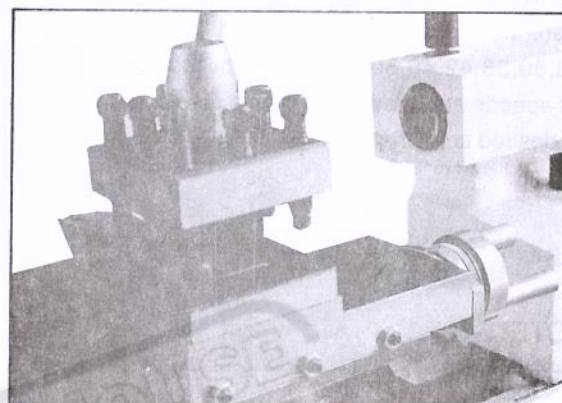


Fig.2

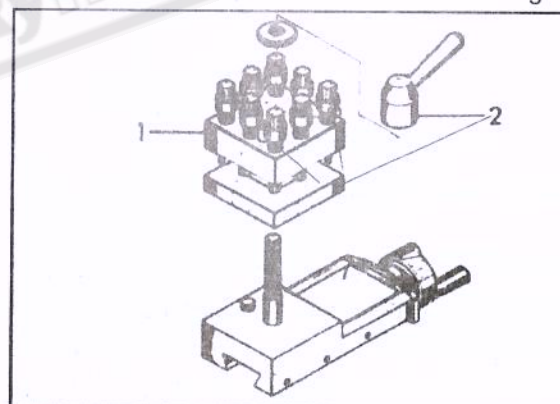


Fig.3

Chip Guard

Travels with the tool and protects the operator from flying shavings.

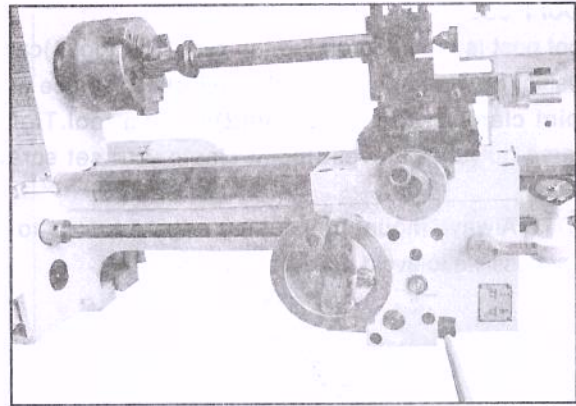


Fig.1

Changing Lathe Gears

There are 6 gears each having a different number of teeth (28,30,36,42,45,80). They can be combined for different speeds and feeds as required. See chart on headstock for desired combinations.

NOTE:

The 80 teeth plastic gear fitted to the machine is a safety gear and should be replaced with a new one if damaged.

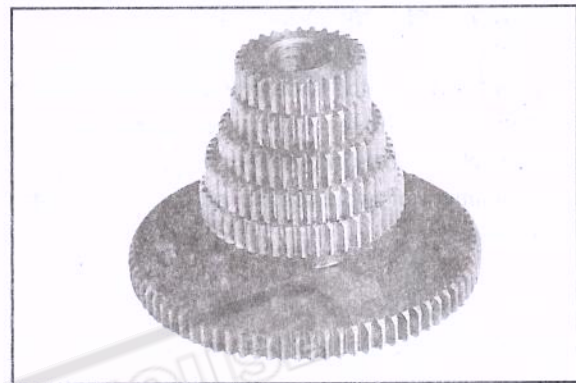


Fig.2

Cabinet Stand(Optional)

The optional cabinet stand is designed exclusively for the CT-918 Lathe, made of plate steel construction. The center portion of the stand has a built in tool box (Fig.3). The center portion has a built in storage cabinet.

The lower section can be used for a coolant pump.

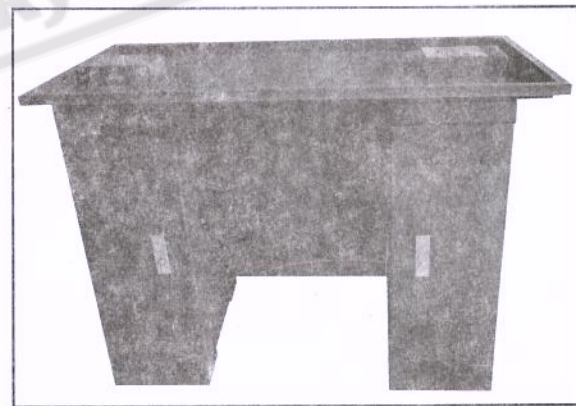


Fig.3

BEARING AND SLIDE ADJUSTMENT

Adjustment of Main Spindle Bearings

The main spindle bearings are correctly adjusted at the factory. If end play becomes evident after considerable use, the bearings can be adjusted by backing the grub screw (1) in the slotted nut (2) on the back end of the spindle and tightening the slotted nut until all end play is taken up, but still allowing the spindle to revolve freely. (Excessive preloading will damage the bearing). Tighten grub screw. (Fig.1)

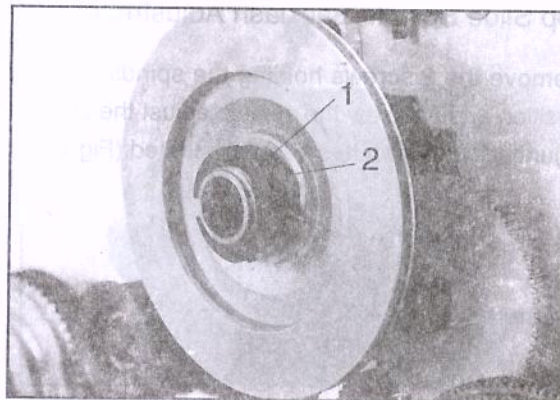


Fig.1

Adjustment of Cross and Top Slides

Each slide is fitted with a gib strip which can be adjusted with screws (1) fitted with lock nuts (2) (Fig.1) the gib strip is adjusted with screws until the slide moves freely without play, after which the lock nuts are tightened.

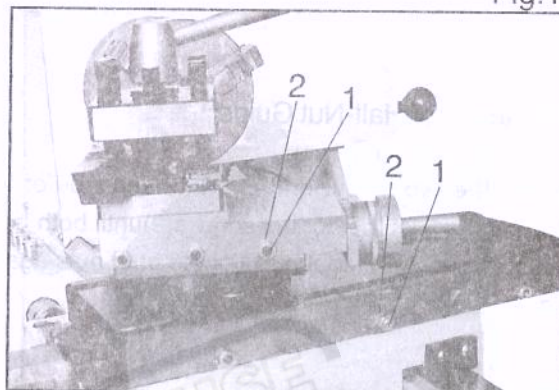


Fig.2

Adjustment of Feed Screw End Float

Adjustment of slides on the saddle: (Fig.3) loosen screw (1) and lock nut (2) in the relevant handwheel and adjust the nut (2) until all play has been taken up. Relock the nut with the screw.

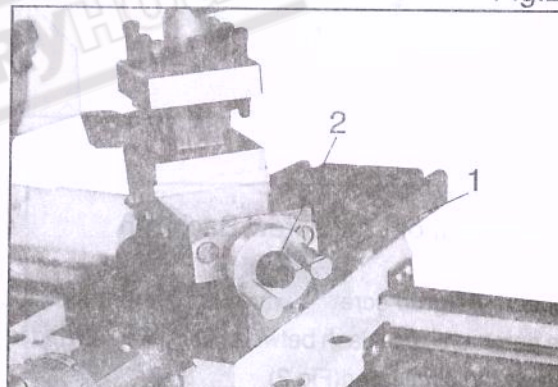
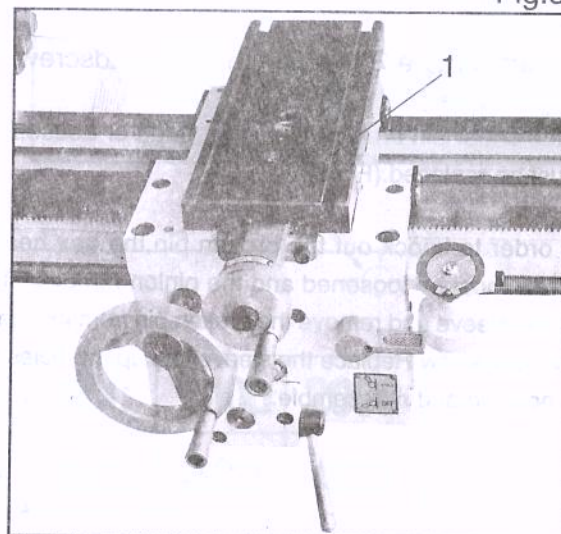


Fig.3

FEED SCREW BACKLASH ADJUSTMENT

Cross Slide Spindle

Remove the top slide (Fig.4) and adjust screw (1) until the backlash between the spindle and nut is eliminated.

Fig.4
20

Top Slide Spindle Backlash Adjustrment

Remove the 2 screws holding the spindle bracket in position and unscrew the spindle,adjust the screw ring (1)until all backlash has been eliminated.(Fig.1).

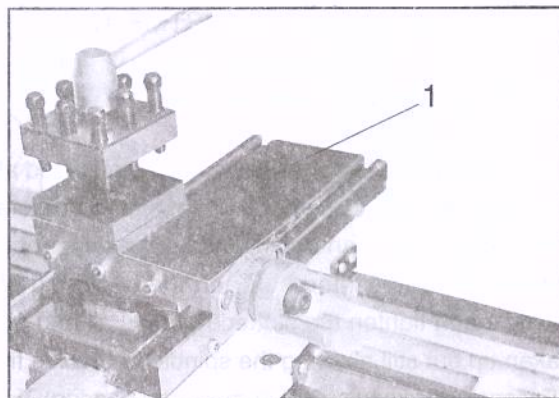


Fig.1

Adjustment of Half-Nut Guide

Loosen the two nuts(1)on the right hand side of the apron and adjust the control screws(2)until both half-nuts move freely without play,tighten both nuts again, (Fig.2)

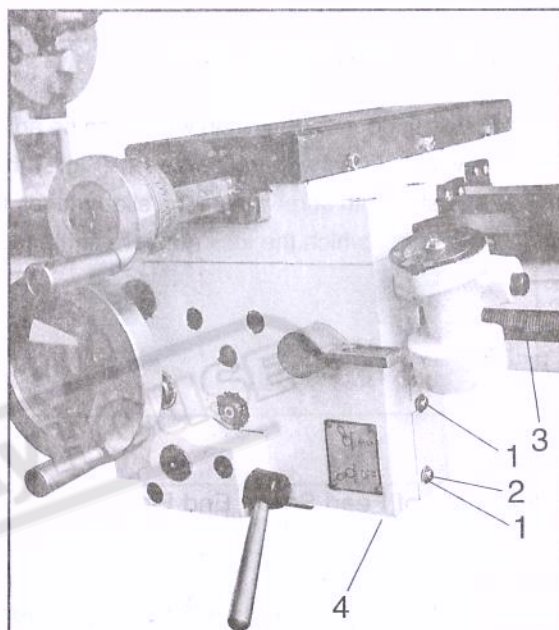


Fig.2

Adjustment of Leadscrew Backlash

Loosen the grub screw 4 which is on the underside of the apron until backlash between the half-nuts and lead-screw(3)is eliminated(Fig.2)

Replacing The Shear Pin In The Leadscrew

If the shear pin breaks due to overload or abuse,it must be replaced.(Fig.3)

In order to knock out the broken pin,the hex headed screw must be loosened and the pinion removed.Take off the sleeve and remove the broken pin from the sleeve and leadscrew.Replace the sleeve,line up the holes and fit new pin and reassemble.

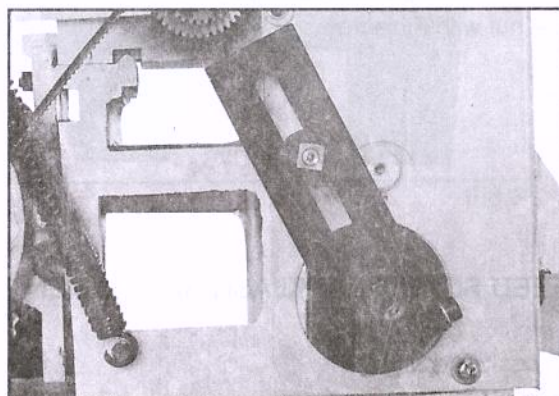


Fig.3

Re-Positioning The V-Belt

Loosen the screw on top of the headstock and open the cover

When re-positioning belt it is necessary to slacken the idler. That is achieved by moving the lever in the direction of the headstock. Then the belt can be positioned on the required step. By moving the lever in the direction of the motor, the belt is tensioned. Close the cover and secure with screw.

Note: To avoid breaking of belt move the tension lever towards you before starting.

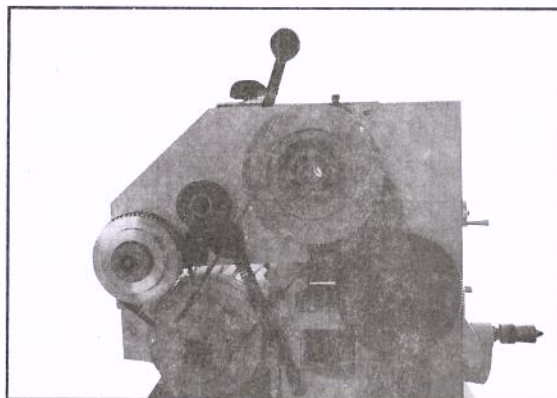


Fig.1

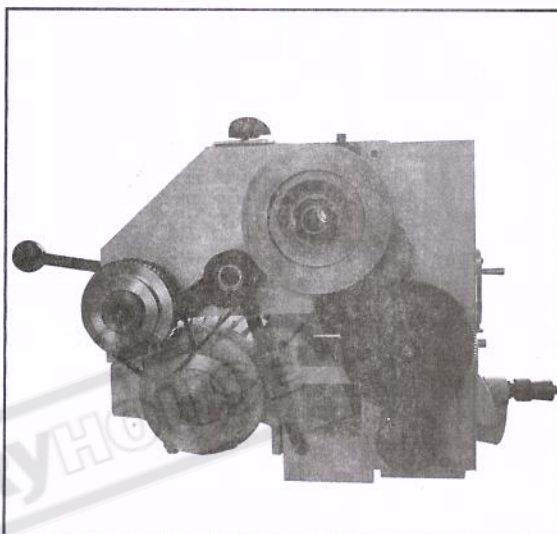


Fig.2

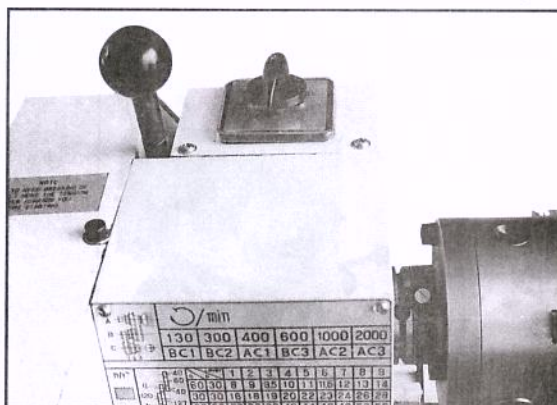
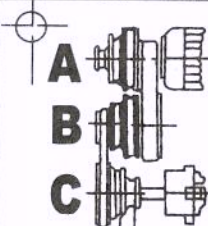


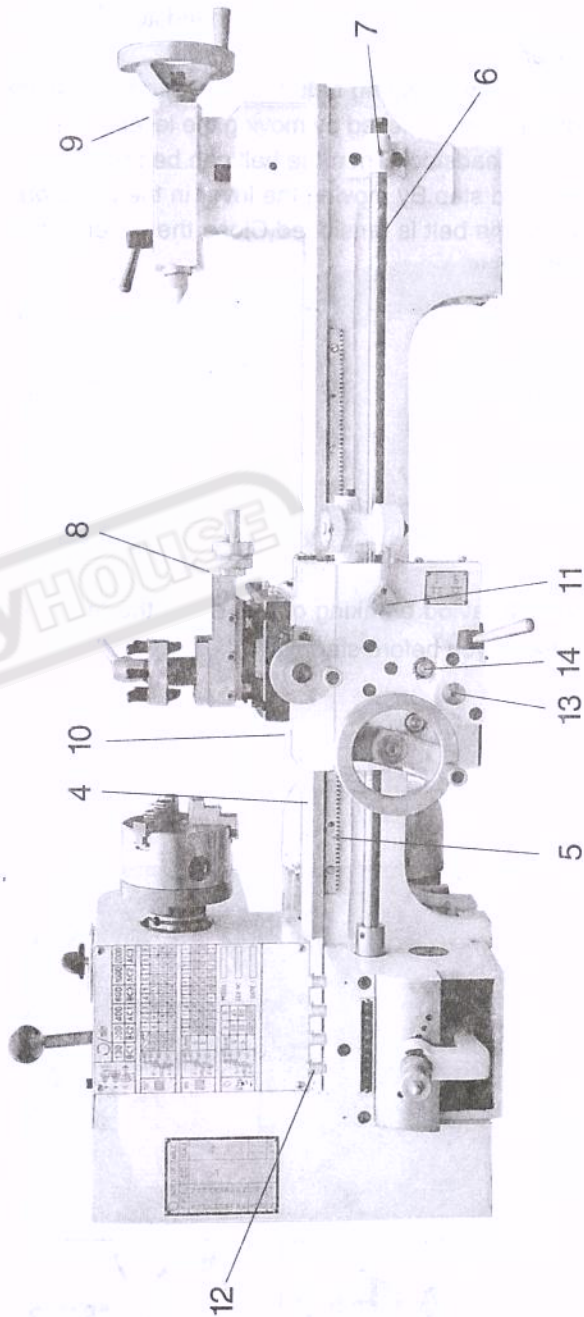
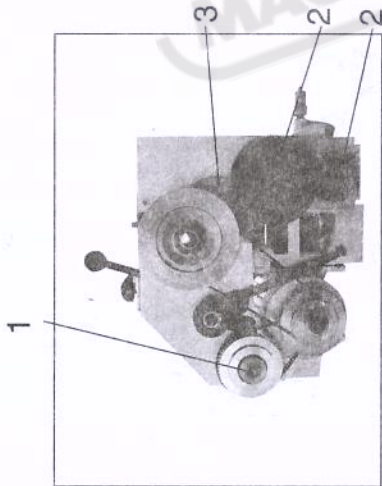
Fig.3

		 / min 					
		130	300	400	600	1000	2000
A		BC1	BC2	AC1	BC3	AC2	AC3
B							
C							

LUBRICATION PLAN

23

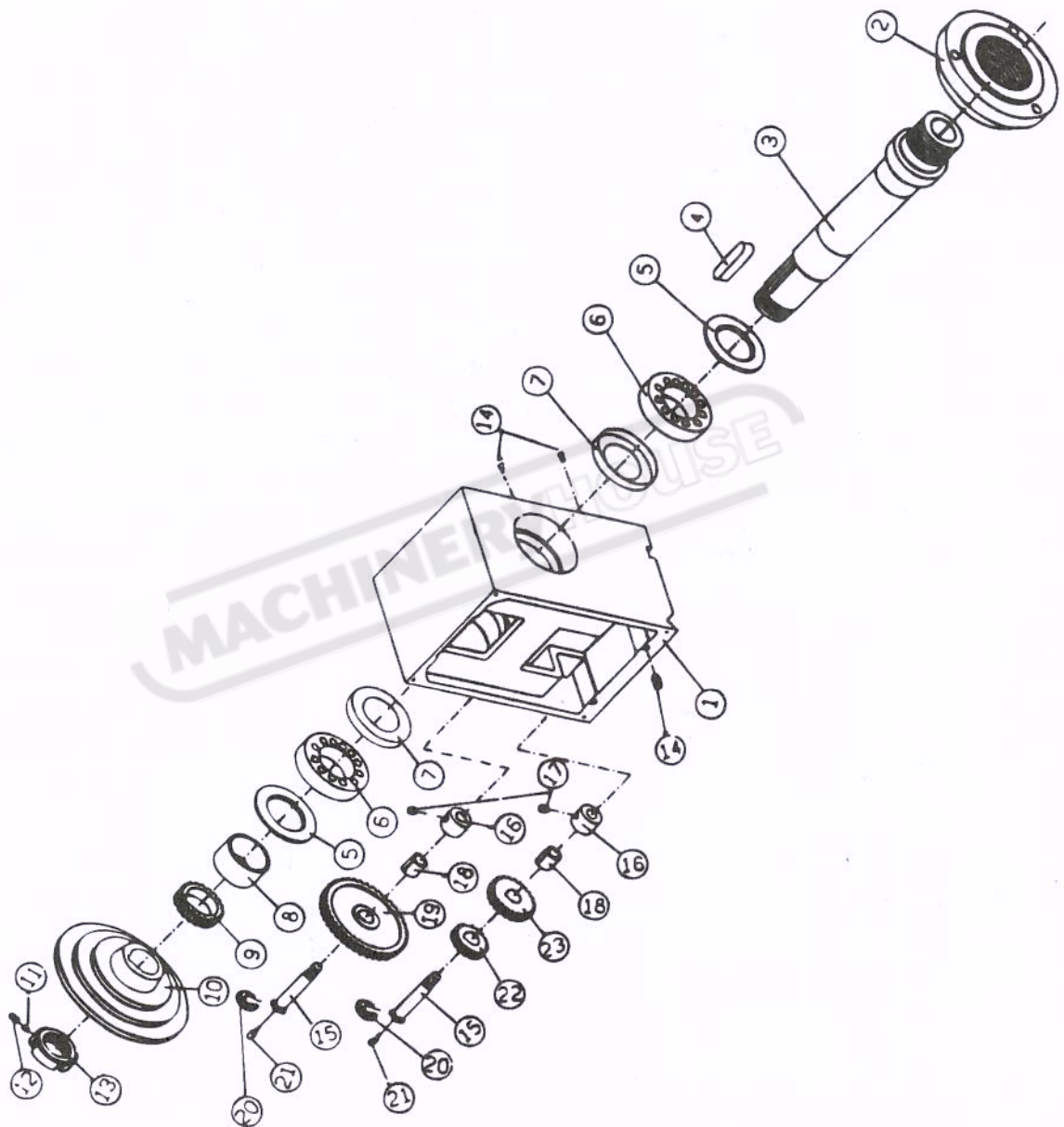
No.	Interval	Position	Grease	Oil
	Daily			
1	Daily	Oil nipple		•
2	Daily	Feed gear:change gears	•	
3	Daily	Teeth-oil		•
4	Daily	Bed ways:clean and oil		•
5	Daily	Rack:grease over complete length	•	
6	Daily	Leadscrew:clean and oil over complete length		•
7	Daily	Right hand bearing of leadscrew		•
8	Daily	Top slide:guides and screw		•
12	Daily	Gear box		•
13	Daily	Apron automatic feed lever	•	
14	Daily	Oil nipple		•
9	Every 1000 working hours	Tailstock barrel(grease nipple)	•	
10	Daily	Carriage:grease nipple		•
11	Daily	Fed by carriage grease nipple No.11		



HEAD STOCK

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	1002	Headstock	1	
2	1006	Flange Joint	1	
3	1004	Spindle	1	
4		Key	1	
5	1005	Gasket	2	
6		Bearing	2	2007107
7	1003	Cover	2	
8	1007	Spacing Ring	1	
9	1011	Gear	1	40t
10	1008	Pulley	1	
11	1010	Bush	1	
12		Set Screw	1	M4x6
13	1012	Nut	1	M28
14		Set Screw	4	M4x10
15	1017	Shaft	2	
16	1015	Spacing Ring	2	
17		Set Screw	2	M4x6
18	1016	Bush	2	
19	1014	Gear	1	80t
20	1013	Washer	2	
21		Oil Feeder	2	
22	1018	Gear	1	40t
23	1019	Gear	1	

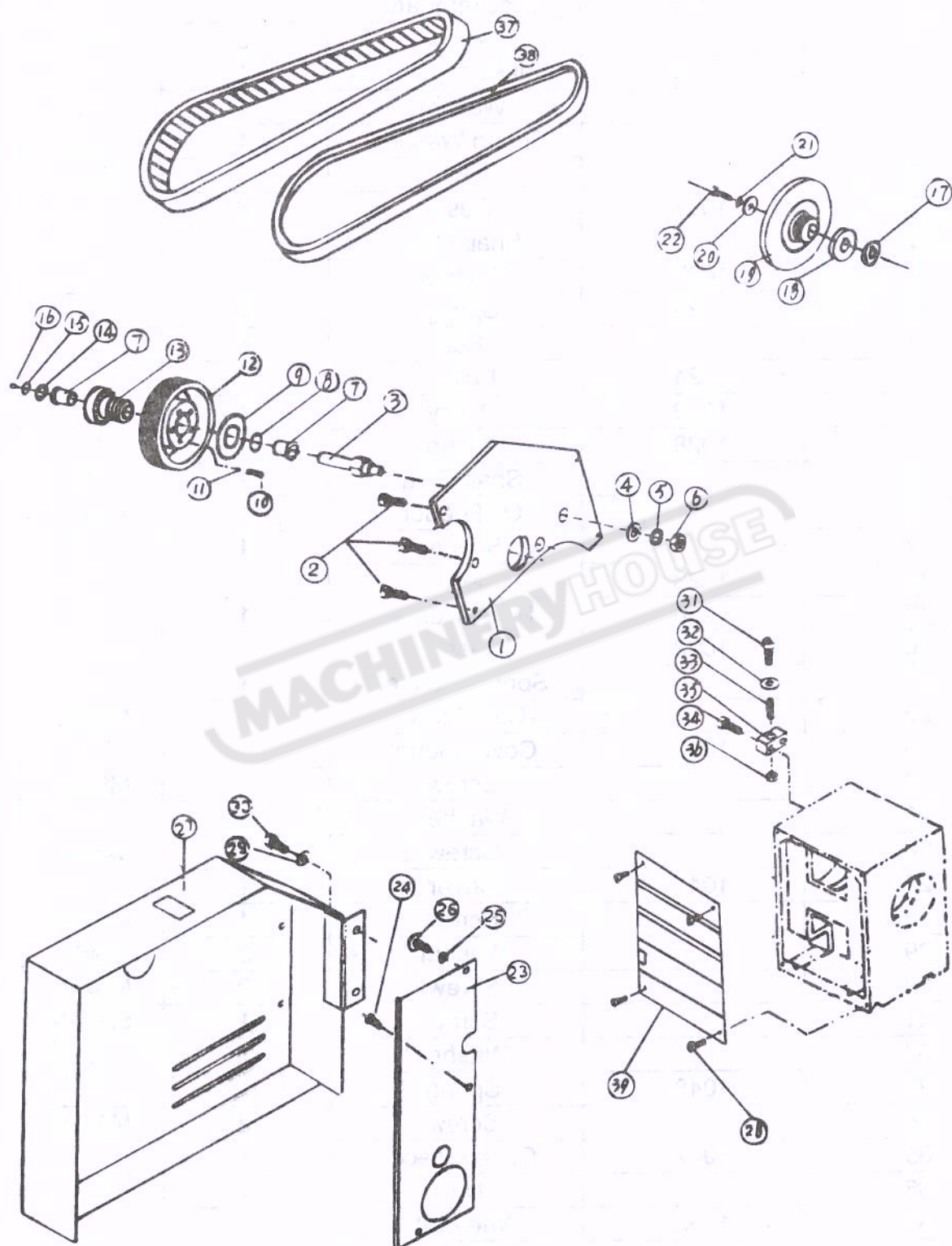
HEADSTOCK



DRIVE

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	1044	Bracket Plate	1	
2		Screw	3	M8x20
3	1026	Belt Pulley Shaft	1	
4		Washer	1	10
5		Spring Washer	1	10
6		Nut	1	Mx10
7	1031	Bush	2	
8		Snap Ring	1	25
9	1027	Washer	5	
10	1025	Spring	5	
11		Ball	5	5
12	1024	Pulley	1	
13	1029	Pulley	1	
14	1028	Washer	1	
15		Snap Ring	1	12
16		Oil Feeder	1	6
17	1021	Spacer	1	
18	1023	Collar	1	
19	1020	Motor Pulley	1	
20	1022	Washer	1	
21		Spring Washer	1	6
22		Cap Screw	1	M6x25
23	1049	Cover Mount	1	
24		Screw	1	M6x12
25		Washer	1	5
26		Screw	1	M5x8
27	1045	Cover	1	
28		Screw	4	M4x10
29		Washer	2	M6
30		Screw	2	M6x10
31		Screw	1	M6x25
32		Washer	1	6
33	1048	Spring	1	
34		Screw	2	M6x20
35	1047	Clamp Piece	1	
36		Nut	1	M6
37	1052	Vee Belt	1	
38		Tooth Belt	1	
39	1001	Plate	1	

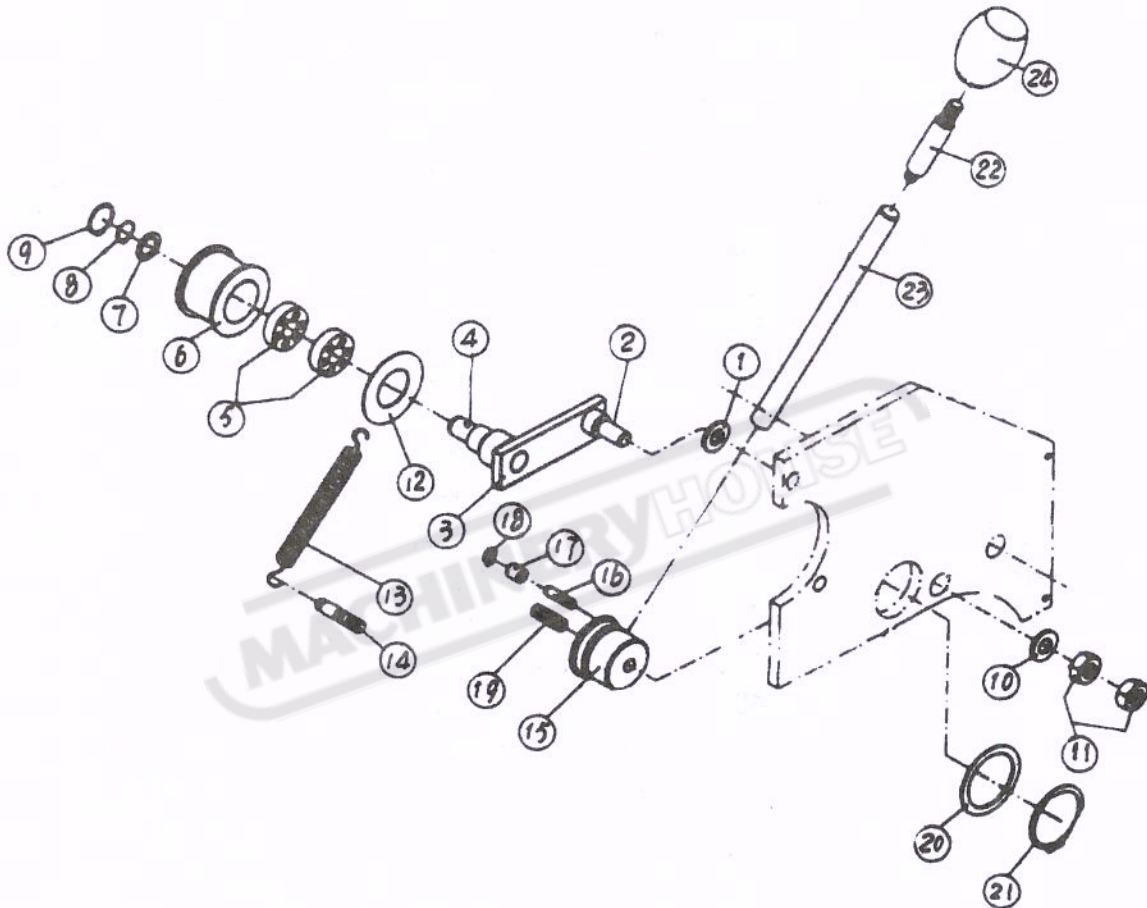
DRIVE



TENSIONING ROLLER

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	1040	Washer	1	
2	1035	Bolt	1	
3	1035-1	Lever Bracket	1	
4	1035-2	Lever	1	
5		Bearing	2	101
6	1039	Roller	1	
7	1038	Washer	1	
8		Snap Ring	1	12
9		Snap Ring	1	28
10		Washer	1	10
11		Nut	2	M10
12	1036	Washer	1	
13	1037	Spring	1	
14	1050	Bolt	1	
15	1032	Toggle	1	
16	1051	Bolt	1	
17	1033	Sleeve	1	
18		Snap Ring	1	6
19		Set Screw	1	M8X12
20	1034	Wave Washer	1	
21		Snap Ring	1	32
22	1042	Lever	1	
23	1043	Lever	1	
24		Knob	1	

TENSIONING ROLLER

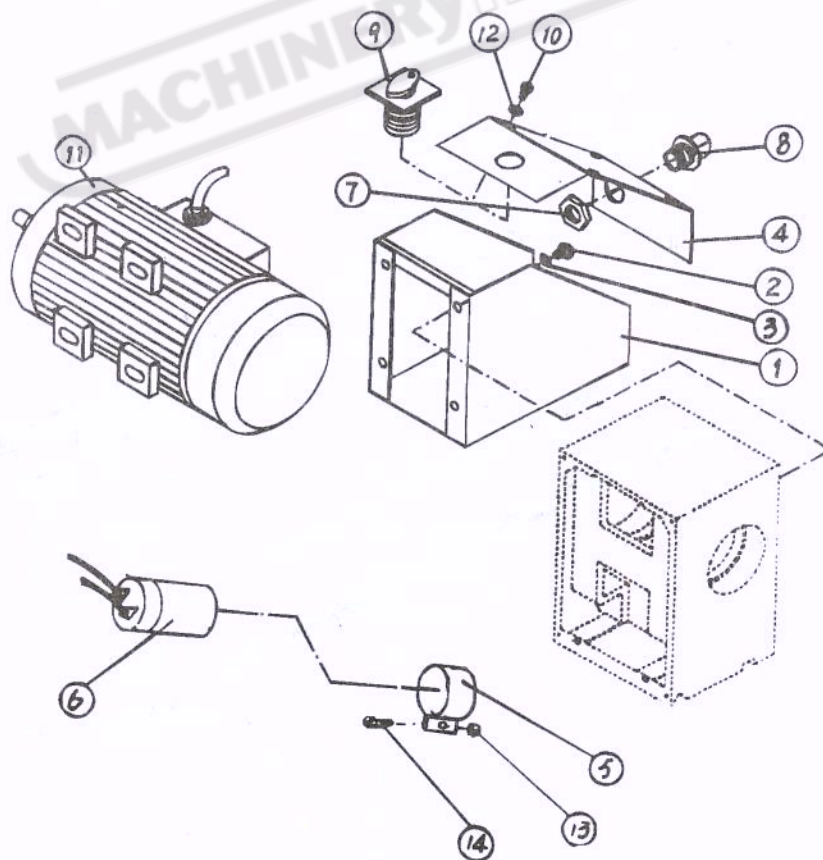


QUADRANT

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	2003	Bracket	1	
2	2004	T-Nut	1	
3		Washer	1	6
4	2005	Shaft	1	
5	2009	Bush	2	
6	2001	Gear	1	127T
7	2002	Gear	1	120T
8	2006	Washer	1	
9		Oil Feeder	1	6
10		Washer	1	10
11		Pin	1	Ø4X14
12	2007	Gear	2	30T
13	2008	Spacing Ring	1	
14		Washer	1	6
15		Screw	1	M6X10
16		Spring Washer	1	6
17		Screw	1	M6X35
18	2010	Gear	1	28T
19	2011	Gear	1	36T
20	2012	Gear	1	42T
21	2013	Gear	1	45T
22	2014	Gear	1	60T
23	2015	Gear		80T

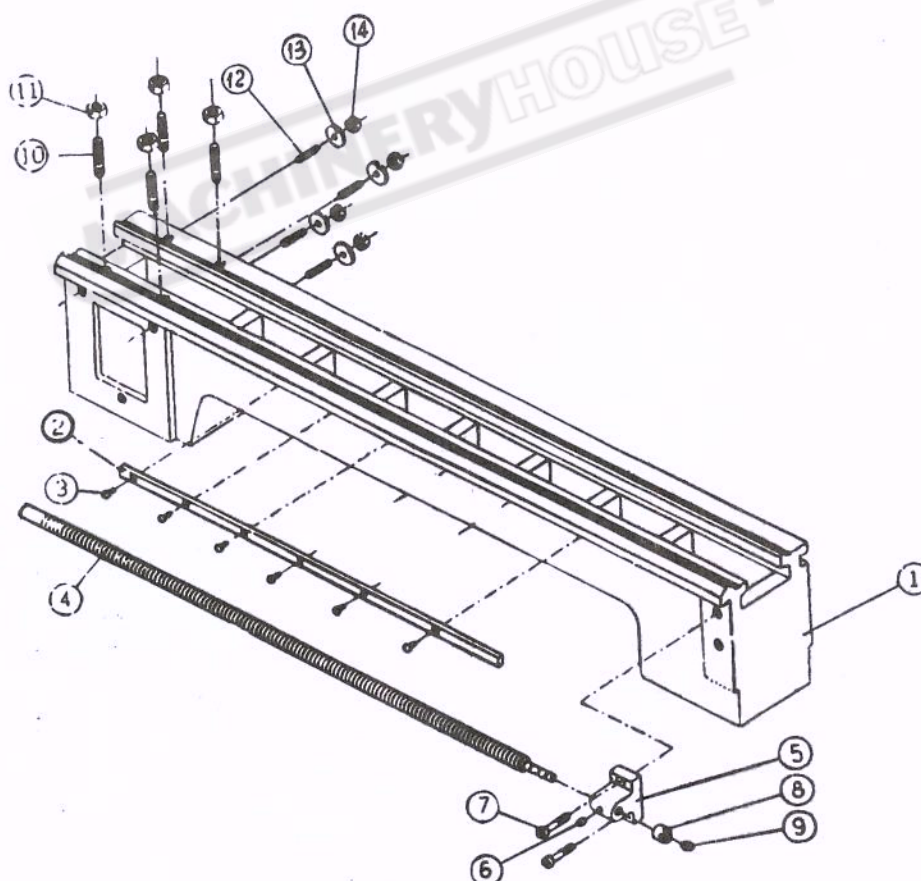
LATHE BED

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	10002	E-Housing	1	
2		Screw	4	
3		Lock Washer	4	
4	10001	Roof	1	
5		Clip	1	
6		Condenser	1	
7		Lock Nut	1	
8		Screw Coup Ling	1	
9		Switch	1	
10		Hexagonal Screw	4	
11		Motor	1	
12		Lock Washer	4	5
13		Nut	1	M5
14		Screw	1	M5x10



LATHE BED

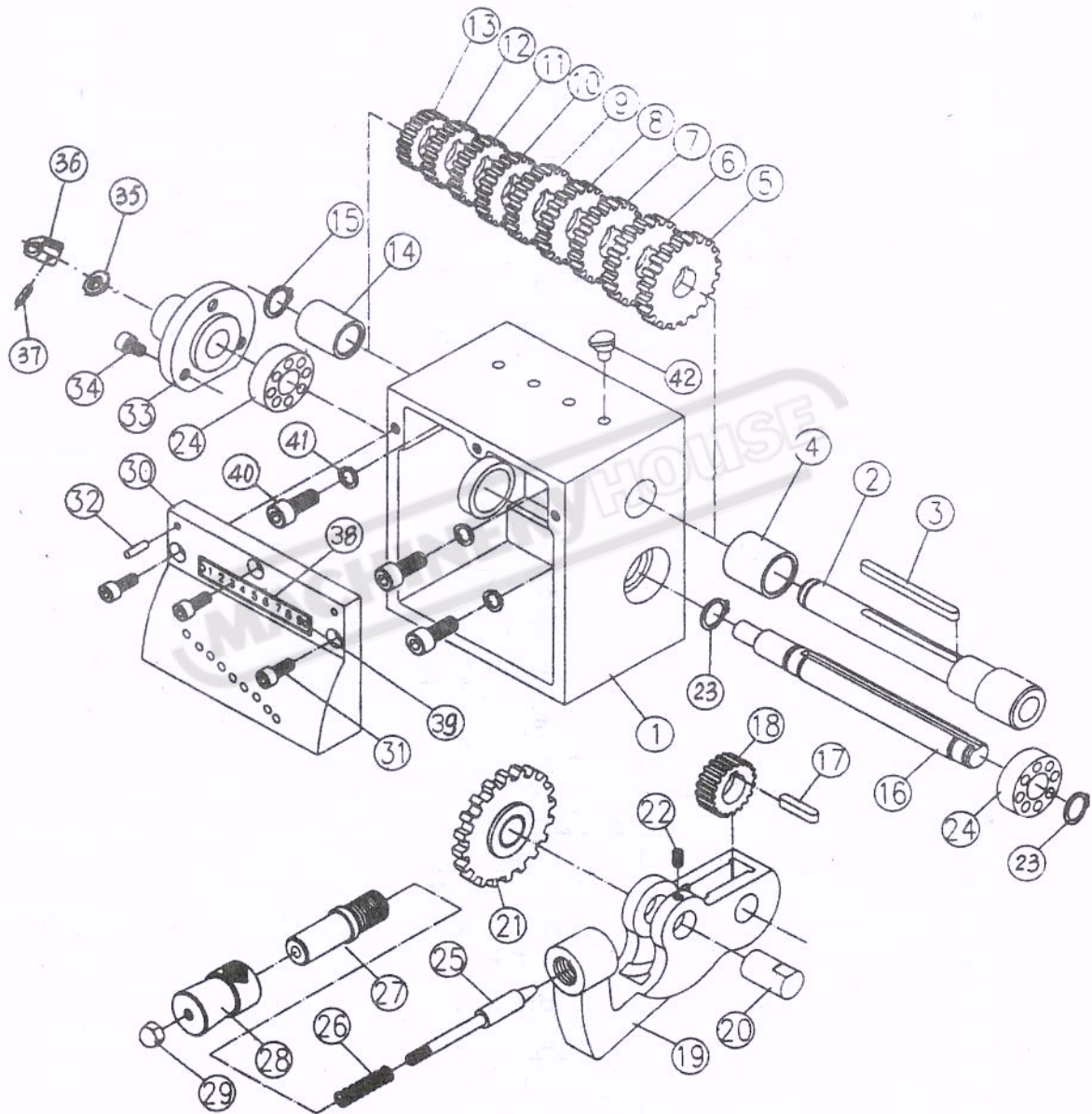
INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	7001	Bed	1	
2	7002	Rack	1	
3		Screw	6	M4x8
4	7003	Head Screw	1	
5	7004	Bracket	1	
6		Oil Feeder	1	6
7		Screw	2	M6x20
8	7005	Nut	1	
9		Set Screw	1	M8x6
10		Stud	4	M8x28
11		Nut	4	M8
12		Set Screw	4	M6x25
13		Spring Washer	1	6
14		Nut	4	M6



GEAR BOX

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	3001	Gear Box	1	
2	3009	Shaft	1	
3		Key	1	
4	3019	Bush	1	
5	3018	Gear	1	28T
6	3017	Gear	1	26T
7	3016	Gear	1	24T
8	3015	Gear	1	23T
9	3014	Gear	1	22T
10	3013	Gear	1	20T
11	3012	Gear	1	19T
12	3011	Gear	1	18T
13	3010	Gear	1	16T
14	3025	Bush	1	
15		Snap Ring	1	16
16	3020	Shaft	1	
17		Key	1	
18	3021	Gear	1	16T
19	3002	Arm	1	
20	3007	Shaft	1	
21	3023	Gear	1	36T
22		Set Screw	1	M5X10
23		Snap Ring	2	15
24		Bearing	2	80202
25	3004	Plunger	1	
26	3005	Spring	1	
27	3003	Bush	1	
28	3006	Handle	1	
29		Cap Nut	1	M10
30	3008	Front Cover	1	
31		Cap Screw	3	M6X15
32		Pin	2	Ø6X22
33	3022	Bracket	1	
34		Cap Screw	3	M6X10
35		Washer	1	10
36	2009	Bush	1	
37		Pin	1	Ø4X14
38	3026	Plate	1	
39		Rivet	2	2X5
40		Cap Screw	3	M8X20
41		Spring Washer	3	8
42		Oil Cup	4	M8X1

GEAR BOX



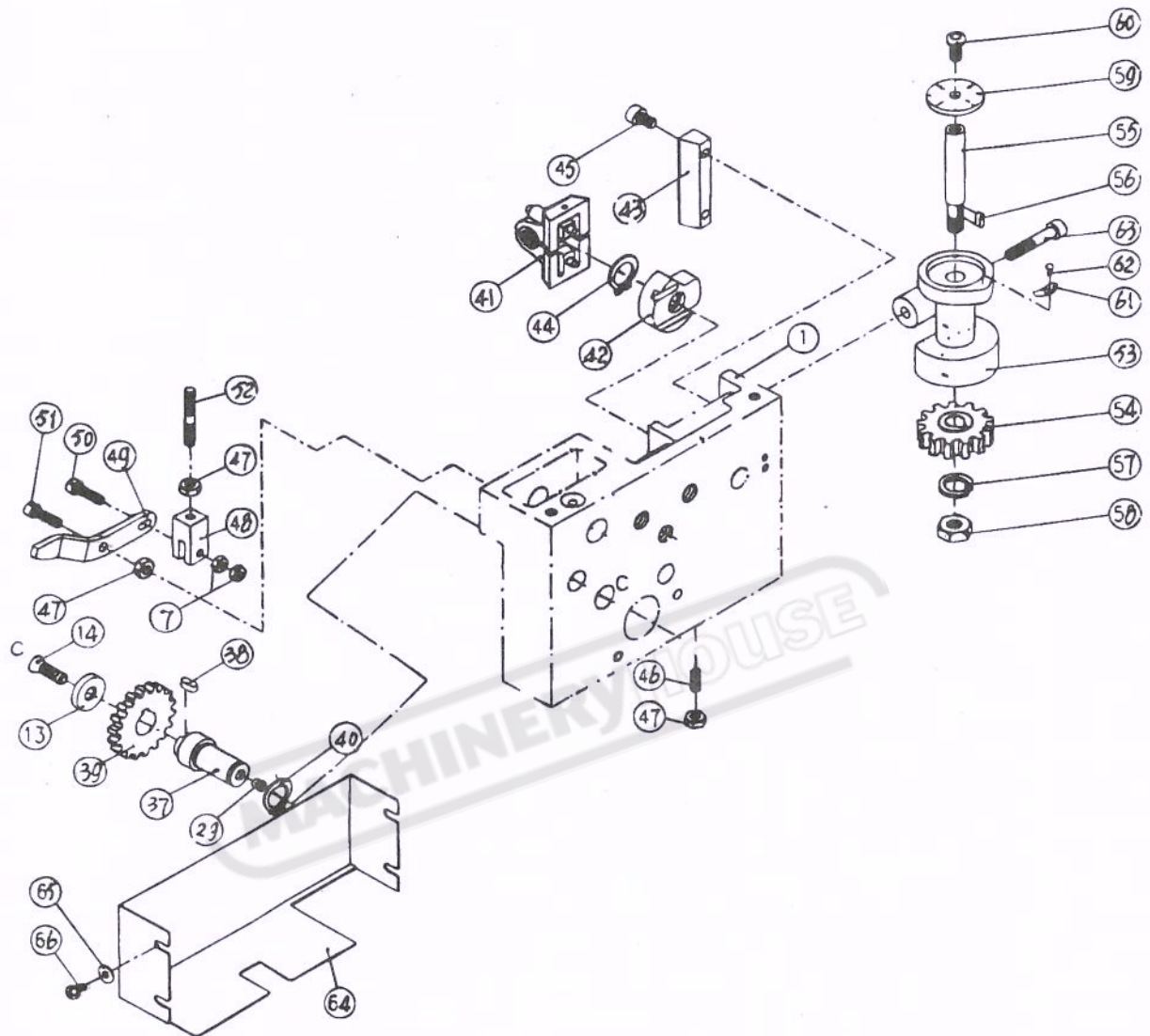
APRON

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	4006	Apron Casting	1	
2	4034	Bracket	1	
3	4033	Worm	1	
4		Key	1	3x25
5		Cap Screw	3	M6x25
6		Feed Screw	1	
7		NUT	5	M4
8		Ser Screw	2	M4x12
9		Ball	2	Ø5
10	4021	Spring	1	
11	4022	Handle	1	
12		Set Screw	2	M6x6
13	4005	Washer	3	
14		Screw	3	M6x8
15	4008	Gear	1	12T
16		Spring Pin	1	4x30
17	4007	Gear	1	43T
18	4015	Handle	1	
19	4014	Gear	1	13T
20	4013	Bracket	1	
21	4025	Spring	1	
22		Set Screw	1	M4x10
23		Cap Screw	2	M6x30
24	4011	Gear	1	36T
25	4016	Gear	1	18T
26		Key	1	4x5
27	4012	Worm Gear	1	42T
28		Ring	1	14
29		Oil Feeder	2	6
30	4004	Gear	1	17T
31	4003	Hand Wheel	1	
32		Spring Pin	1	4x25
33	4002	Screw	1	
34	4001	Handle	1	
35	4018	Plate	1	

APRON

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
37	4009	Shaft	1	
38		Key	3	4x11
39	4010	Gear	1	41T
40		Ring	1	12
41	4017	Half Nut	1	
42	4019	Locking Cam	1	
43	4020	Guide	2	
44		Ring	1	8
45		Cap Screw	5	M4x16
46		Set Screw	5	M5x25
47		Nut	5	M5
48	4030	Control Plate	1	
49	4032	Joint Plate	1	
50		Cap Screw	1	M4x20
51		Cap Screw	1	M5x16
52	4031	Screw	1	
53	4036	Thread Dial Body	1	
54	4029	Worm Gear	1	64T
55	4028	Shaft	1	
56		Key	1	3x10
57		Spring Washer	1	8
58		Nut	1	M8
59	4027	Dial	1	
60		Screw	1	M6x8
61	4024	Pointer	1	
62		Rivet	1	2x5
63	1045	Screw	1	
64	4023	Apron Cover	4	M6x60
65		Washer	2	4
66		Screw	2	M4x8

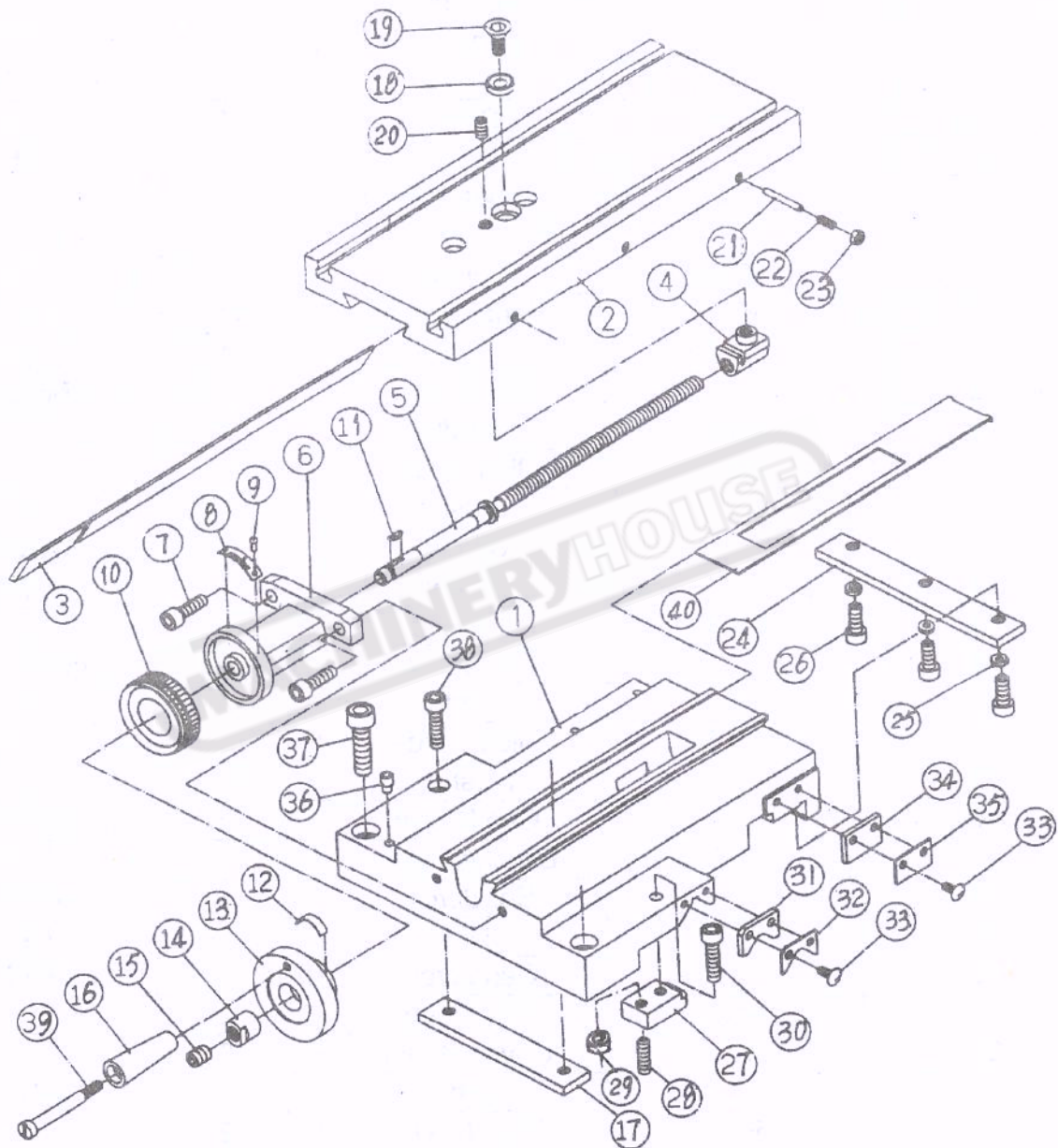
APRON



SADDLE AND CROSS SLIDE

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	5005	SADDLE	1	
2	5006	Cross Slide	1	
3	5002	Gib	1	
4	5036	Nut	1	
5	5018	Lead Screw	1	
6	5019	Bracket	1	
7		Screw	2	M6X15
8	5026	Plate	1	
9		Rive	2	2X5
10	5020	Graduated Ring	1	
11		Key	1	3X13
12	5023	Spring	1	
13	5021	Hand Wheel	1	
14	5022	Nut	1	
15		Set screw	1	M8X6
16	5025	Handle	1	
17	5003	Slide Guide	1	
18	5037	Bush	1	
19		Screw	1	M6X12
20		Screw	1	M4X8
21	5001	Pin	3	
22		Set Screw	3	M4X12
23		Nut	3	M4
24	5016	Slide Guide	1	
25		Washer	3	6
26		Cap Screw	3	M6X15
27	5017	Binding Piece	1	
28		Set Screw	1	M6X20
29		Nut	1	M6
30		Cap screw	1	M6X25
31	5042	Way Cover	2	
32	5041	Cover Mount	2	
33		Screw	8	M4X6
34	5040	Way Cover	2	
35	5039	Cover Mount	2	
36		Oil Feeder	1	6
37		Cap Screw	2	M8X30
38		Cap Screw	2	M6X25
39	5024	Screw	1	
40	5038	Cover Mount	1	

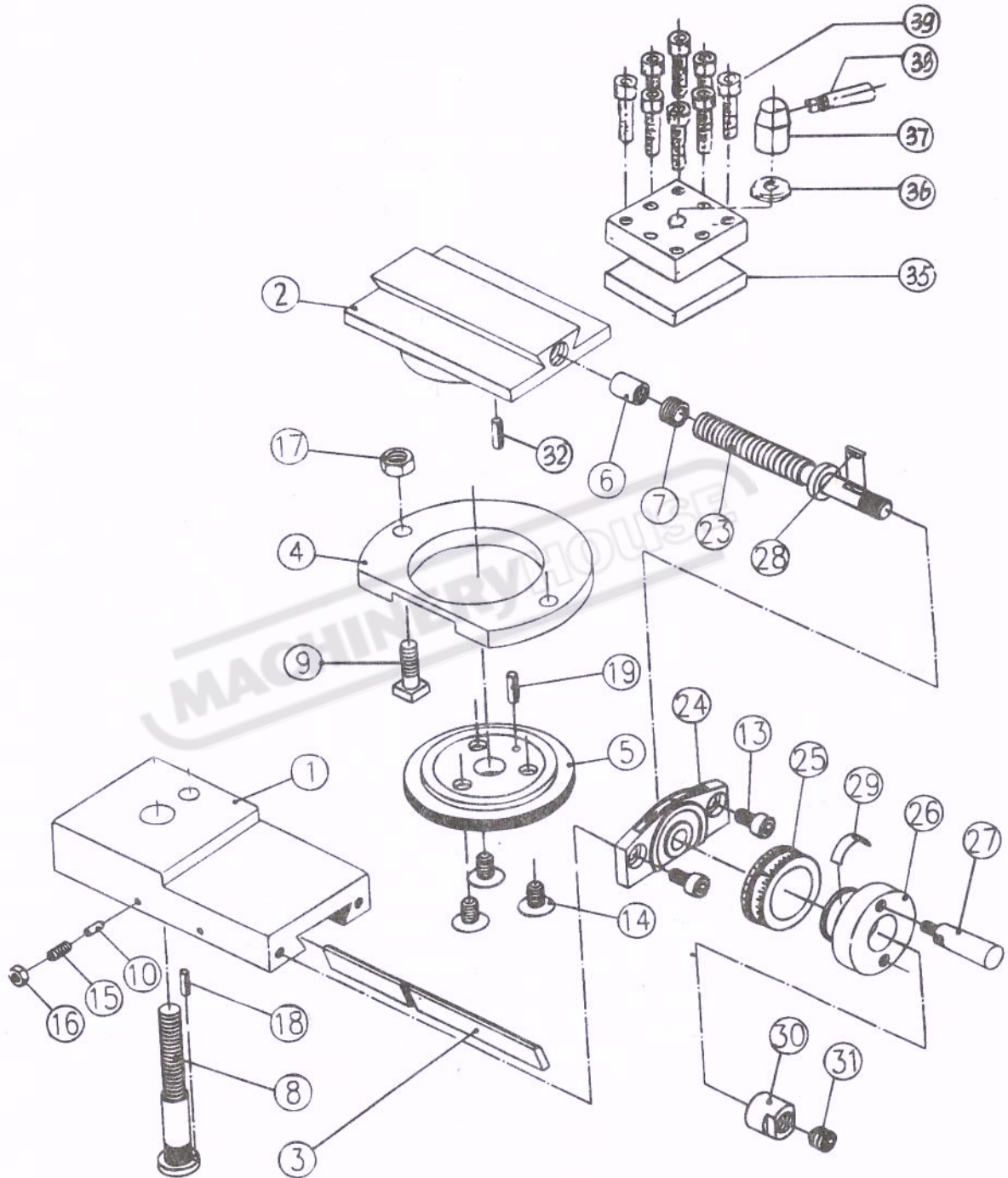
SADDLE AND CROSS SLIDE



DRIVE

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	5011	Longitudinal Slide	1	
2	5010	Swivel Base	1	
3	5028	Gib	1	
4	5008	Clamping Ring	1	
5	5009	Micrometer Pan	1	
6	5013	Lead Screw Nut	1	
7	5014	Adjusting Screw	1	
8	5033	Screw	1	
9	5007	T-Cap Screw	2	
10	5027	Pin	3	
13		Flat Head Screw	2	M5x10
14		Flat Head Screw	3	M6x12
15		Set Screw	3	M4x10
16		Nut	3	M4
17		Nut	2	M6
18		Lock Pin	1	3x8
19		Lock Pin	1	3x14
23	5012	Lead Screw	1	
24	5043	Lead Screw Mount	1	
25	5004	Micrometer Collar	1	
26	5031	Handwheel	1	
27	5015	Handle	2	
28		Key	1	3x13
29	5023	Feed Spring	1	
30	5022	Nut	1	
31		Set Screw	1	M8 x6
32		Lock Pin	1	3x12
35	S5033	Tool Post	1	
36	S2100	S-Washer	1	
37	S5031	Hand Nut	1	
38	S5015	Handle	1	
39	S0051	S-Screw	8	M8 x 30

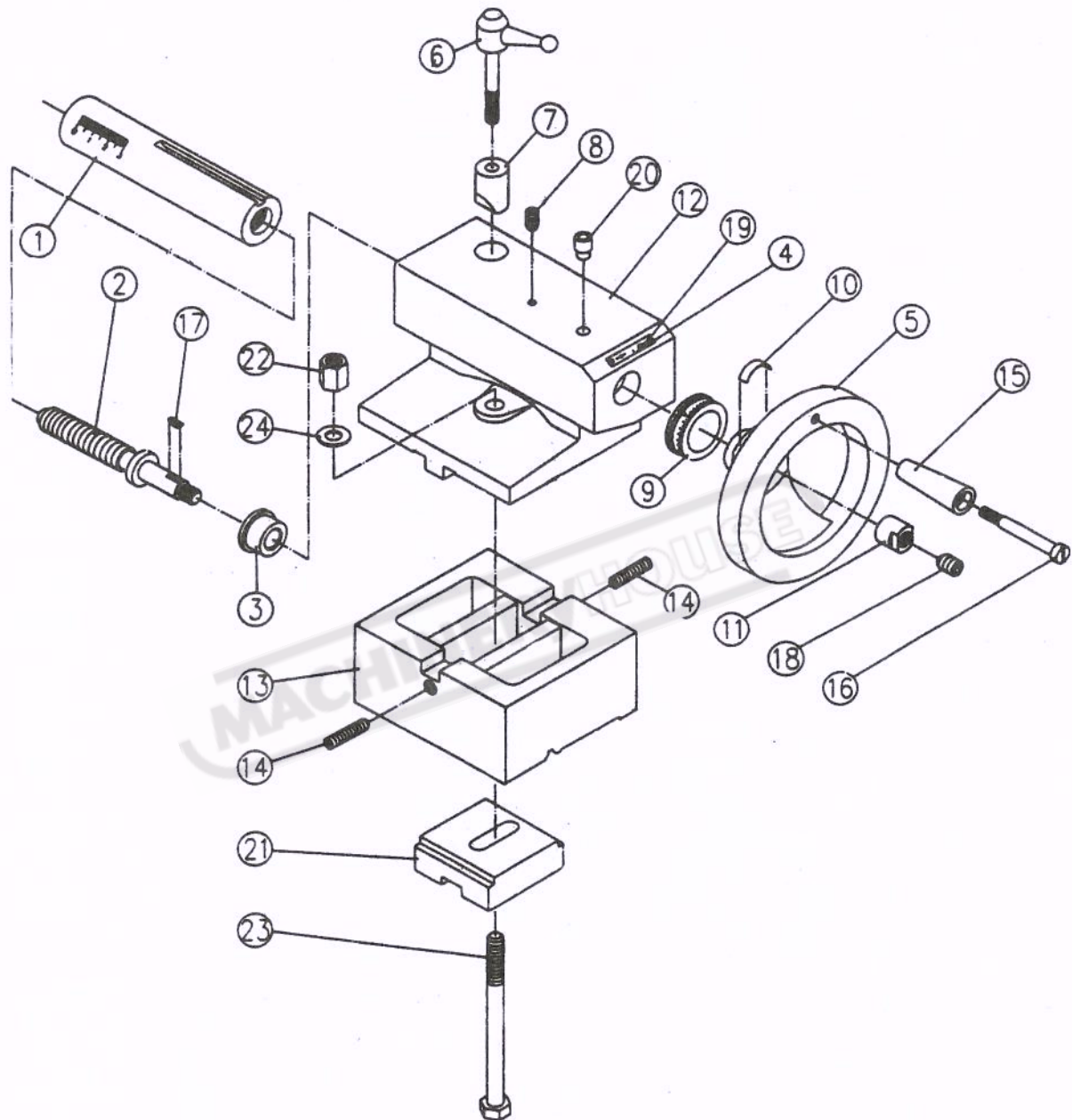
TOP SLIDE



DRIVE

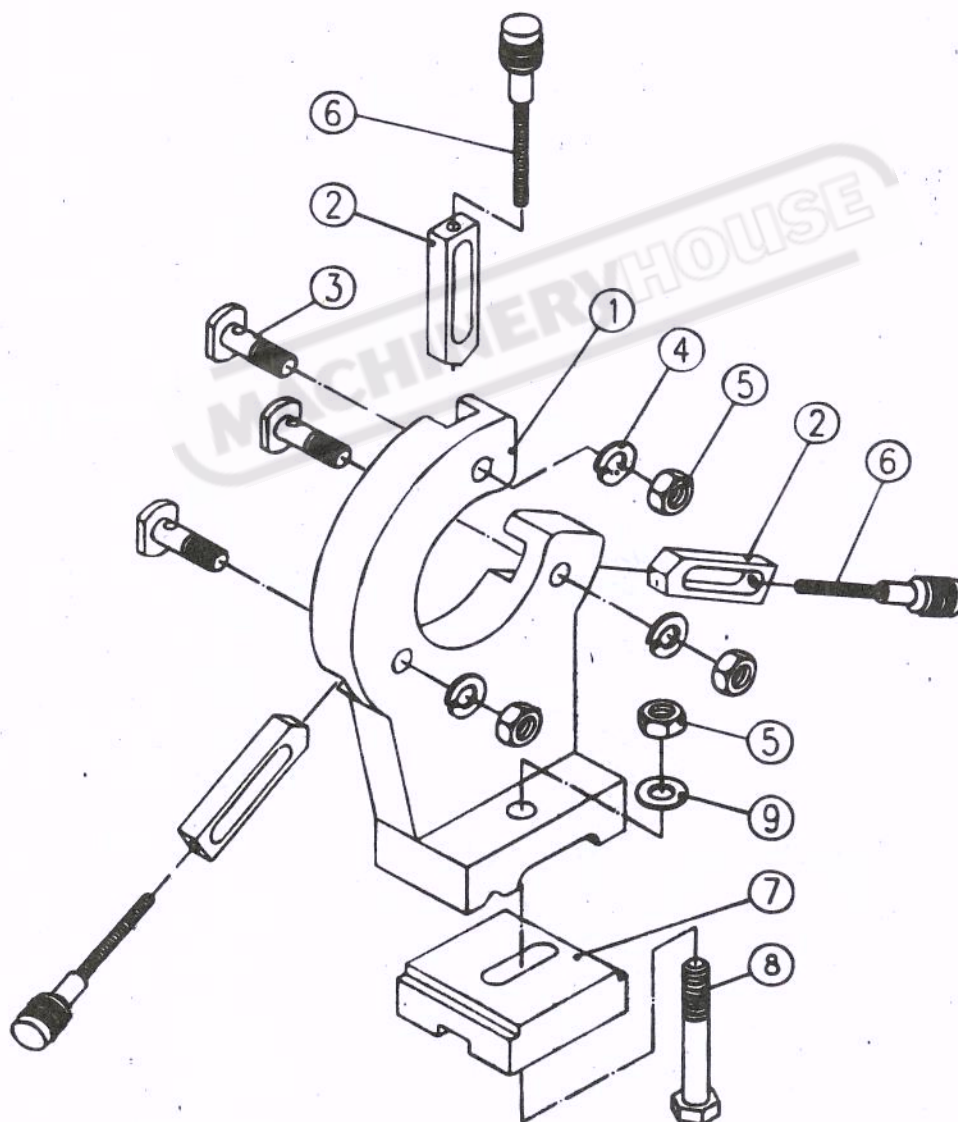
INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	8009	Tailstock Ram	1	
2	8010	Lead Screw	1	
3	8011	Bushing	1	
4	8012	Plate	1	
5	8013	Handwheel	1	
6	8008	Lever	1	
7	8001	Clamp	1	
8		Guide Pin	1	M5x10
9	8016	Micrometer Collar	1	
10	5023	Feed Spring	1	
11	8014	Nut	2	M8
12	8005	Tailstock	1	
13	8002	Tailstock Base	1	
14		Set Screw	2	M8x25
15	4001	Handle	1	
16	4002	Screw	1	
17		Key	1	3x13
18		Set Screw	1	M8x8
19		Rivet	2	
20		Oil Feeder	1	6
21	8015	Clamping Plate	2	
22	8006	Nut	1	M8
23	8007	Screw	1	
24		Washer	1	8

TAIL STOCK



TRAVELLING STEADY REST

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	F1001	Rest Casting	1	
2	F1002	Jaw	2	
3	F1003	Screw	2	
4		Spring Washer	2	8
5		Nut	2	M8
6	F1004	Adjust Screw	2	
7	F1005	Clamping Plate	2	
8		Hexagonal Screw	2	M8x60
9		Washer		8



TRAVELLING STEADY REST

INDEX NO.	PARTS NO.	PARTS NAME	QTY	REMARK
1	F ₂ 001	Rest Casting	1	
2	F ₂ 002	Jaw	2	
3	F ₂ 003	Screw	2	
4	F ₂ 004	Adjust Screw	2	
5		Nut	2	M8
6		Spring Washer	2	8
7		Cap Screw	2	M8x30
8		Washer	2	6

