

B2227L - METAL LATHE 10" X 18"



COPYRIGHT © 2006 BY CRAFTEX INDUSTRIES INC.

NO PORTION OF THIS MANUAL MAY BE REPRODUCED WITHOUT
THE WRITTEN CONSENT OF CRAFTEX INDUSTRIES INC.



B2227L – 10" x 18" METAL LATHE

INDEX

General Safety Instructions	Page 3
Features & Specifications	Page 4
Installation & Lifting	Page 5 & 6
Installation & Operation	Page 6
Operation & Gear Transmission Diagram	Page 7
Operation & Gear Table	Page 8 & 9
Maintenance and Lubrication	Page 10 Diagram
Lubrication Positions	Page 11
Description of Gear, Screw and Nuts In All Parts of the Lathe	Page 12 & 13
Diagram of Draining of Bench Lathe	Page 14
Transmission System of Lathe	Page 15
Parts Diagram – Apron	Page 14
Parts Listing – Apron	Page 15
Parts Diagram – Bed & Carriage	Page 16
Parts Listing – Bed & Carriage	Page 17
Parts Diagram – Tailstock	Page 18
Parts Listing – Tailstock	Page 19
Parts – Diagram Compound Slide	Page 20
Parts Listing – Compound Slide	Page 21
Parts Diagram – Headstock	Page 22
Parts Listing – Headstock	Page 21
Parts Listing – Headstock	Page 22
Parts Diagram – Feed Box	Page 23
Parts Listing - Feed Box	Page 24
Parts Diagram – Change Gear Box	Page 25
Parts Listing – Change Gear Box	Page 26

GENERAL SAFETY INSTRUCTIONS

EXTREME CAUTION SHOULD BE USED IN OPERATING ALL POWER TOOLS. KNOW YOUR POWER TOOL, BE FAMILIAR WITH ITS OPERATION. READ THE OWNER'S MANUAL AND PRACTICE SAFE USAGE PROCEDURES AT ALL TIMES.

- ❑ **CONNECT** your machine **ONLY** to the matched and specified power source.
- ❑ **WEAR SAFETY GLASSES, RESPIRATORS, HEARING PROTECTION** and **SAFETY SHOES** when operating heavy machinery. **Always wear safety glasses.**
- ❑ **DO NOT** wear loose clothing or jewellery when operating machinery.
- ❑ **A Safe Environment is important.** Keep the area free of dust, dirt and other debris in the immediate vicinity of the machine.
- ❑ **BE ALERT!** Do Not Use prescription or other drugs that may affect your ability or judgement to safely use this machine.
- ❑ **DISCONNECT** the power source when changing tool bits and or any equipment.
- ❑ **NEVER** leave an operating tool unattended.
- ❑ **ALWAYS** keep all safety guards in place and ensure their proper function.
- ❑ **ALWAYS** make sure that any tools used for adjustments are removed before operating the machine.
- ❑ **ALWAYS** secure your work with the appropriate clamps or vices.
- ❑ **ALWAYS** keep bystanders safely away while operating machinery.
- ❑ **THINK SAFETY. WORK SAFELY.** Never attempt a procedure if it does not feel safe or comfortable.

B2227L 10" X 18" METAL LATHE

As part of the growing line of Craftex metalworking equipment, we are proud to offer the B227L Metal Lathe. The Craftex name guarantees Craft Excellence. By following the instructions and procedures laid out in this owner's manual, you will receive years of excellent service and satisfaction. The B2227L is a professional tool and like all power tools, proper care and safety procedures should be adhered to.

Features and Specifications

Height of Spindle Centers	125mm/5"
Max. Swing Diameter over bed	250mm/10"
Max. Work piece Diameter over carriage	130mm/5"
Max. Length of work piece between Center	450mm/18"
Max. Cutting Length	420mm/16"
Spindle Bore	27mm/1"
Taper Hole in Spindle	MT # 4
Range of Spindle Speeds	115-1620 RPM
Metric Thread Range	0.5-3.0
Inch Thread Range	8-56 TPI
Max. Longitudinal Travel of Tool Slide	70mm/3"
Max. Transverse Travel of Cross Slide	115mm/4.5"
Tail Stock	MT 2
Max. Travel of Tail stock Sleeve	70mm/3"
Number of Spindle Rotating Speeds	6 Speed Twin Belt Drive
Motor	¾ HP 110V

Standard Accessories

5" 3 Jaw Chuck with Reversible Jaws
2 Centers MT 2 and MT 4
Metric Change Gears
4 Wrenches
6mm Allen Key
Tool Post Wrench

Installation and Lifting

1. Carefully open the crate and check for any damage to the lathe before you go any further. Make sure all standard accessories are accompanied with your lathe.
2. When lifting the lathe from the crate be sure to watch out for the center of gravity, to avoid any accidents.
3. The lathe should be placed in an area that is solid and level ground. The lathe should not be placed in direct sunlight to ensure the lathe keeps its accuracy.
4. The sliding surface and the unpainted parts of the lathe are all oil sealed and coated with anti-rusting grease. Before the installation you should wipe away the grease and oil. Then with the help of a commercial degreaser, varsol or similar solvent removes the remaining grease and oil.
5. While installing the lathe you must use a level gauge to calibrate the mounting level of the machine and the flatness of the guide rail for turning.

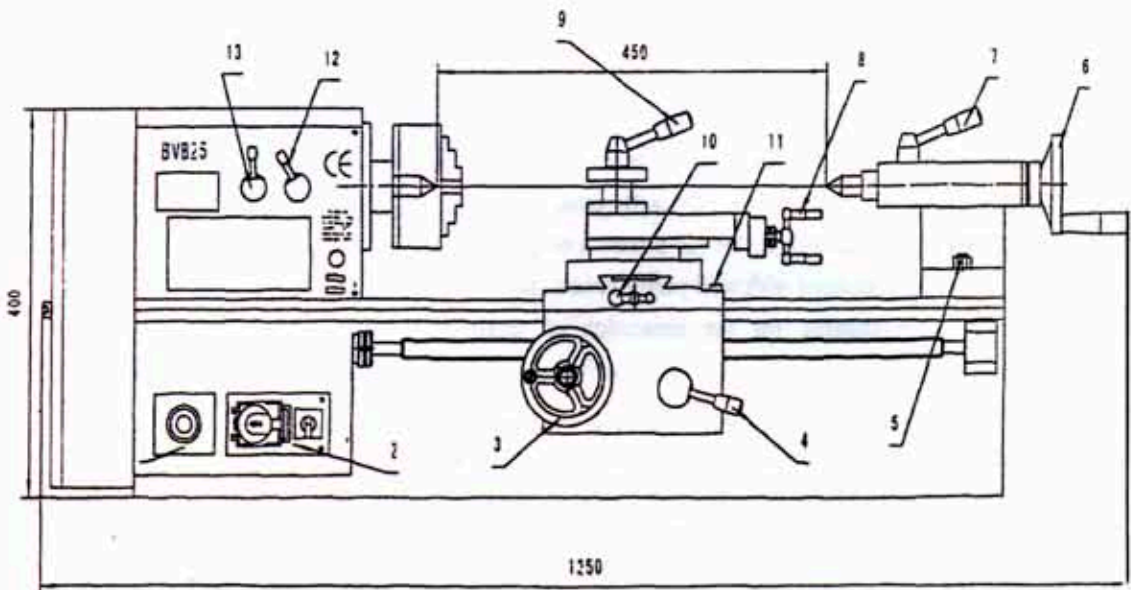


Fig. # 1

Installation Continued

1. After calibrating the mounting level of the lathe you should fill the spindle box with No.10 to No.20 machine oil. The oil level indicator is located on the front end of the headstock.
2. At this time you should also fill up the oil filler points at the different areas of the lathe with lubrication oil. Fig.4
3. Check all the operating handles to see whether they work properly and reliably. Make sure the tightness of the guide way is correct for its movement. If the tightness for the cross slide and tool rest is not correct you can make an adjustment with a shim or plug iron.
4. On the first test run of the lathe you should start the spindle to run at the lowest speed for 20 minutes to allow for a break-in period. This should be done for all speeds until you have reached the maximum speed of the lathe. At each step of the way this will allow you to make sure that there are no unusual sounds or other problems.
5. Never change the speed or the direction of the lathe until the machine has come to a **complete stop**.
6. Before putting the machine into normal operation the operator should carefully and thoroughly read this manual. This will allow the lathe to always perform with precision, accuracy and a longer life.

Operation

Spindle Box

You can move handle (12, 13) according to Fig. 2 of the handle position control for spindle rotating speed. If the gears will not bite each other then please turn the 3-jaw chuck by hand until the gear catches.

Feed Box

Switch (2) is used to operate the forward and reverse motion of the lathe. Switch (1) is a mini electrical magnetic switch. The power switch cover must be open for the lathe to operate. After opening the switch press the green button and the lathe will start. For the emergency stop push the large outer red button and the power will disengage the lathe. The feed box handle (14) Fig. 1 is used to engage the lead screw.














Handle position X  /min		
550	970	1620
 	 	 
115	210	350
 	 	 

Fig # 2 Handle Position for control spindle rotating speed

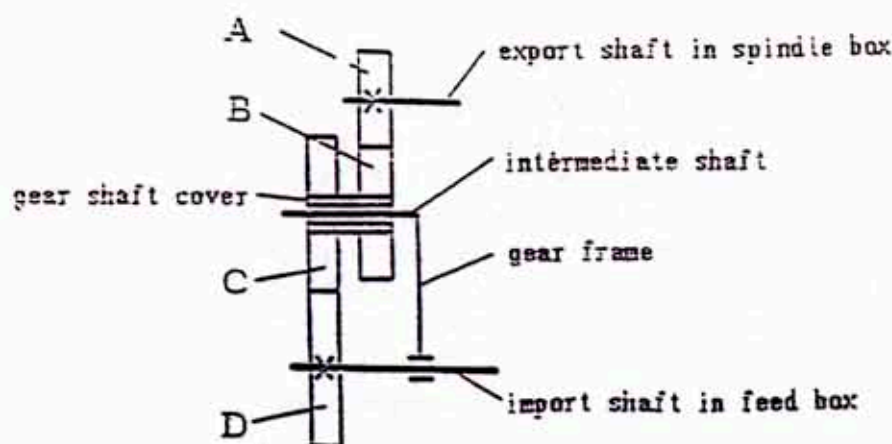



Fig. 3 Diagram Sketch of Gear Transmission

For Threading this machine can be set up in a 3 or 4 gear combination. By removing or installing the spacers (D, C) Fig 4 provided on the main drive shaft and the intermediate drive shaft.

Table 1 Change Gear needed for Different Feed, & Threading Pitch. and the Change Gear System

1/n	8	9	10	11	12	13	14	16	18	20	22	24	26	28	32	36	40	48	52	56
A	70	80	80	80	70	80	70	70	70	70	70	70	70	80	70	35	40	35	35	40
B	60	30	40	40	80	40	80						60	40	60	120	80	80	70	
C	120	70	70	70		70								60			70			
D	40	60	50	55	30	65	35	40	45	50	55	60	65	120	80	45	50	60	65	80
							in			0.0025					0.005					
							A			30					30					
							B			120					60					
							C			35					35					
							D			125					125					

Operation Continued

Apron

Set the handle (4) Fig. 1 to the open position and turn the hand wheel (3). You can make manual longitudinal movement of the apron and the machine saddle. You must set the switch lever (4) Fig. 1 to the close position so that you can maneuver Longitudinal feed and the threading. The required feed and screw pitch are achieved by changing the gear A.B.C.D. according to the Change Gear Table on the spindle box of the machine or in Table 1. This lathe can turn metric and inch screw thread. There is a blank space in the metric screw pitch "B. C." in Table 1. You can fix a proper gear link mechanism in the intermediate shaft when there is no Table No. of teeth or gears.

Tail stock

The hex nut (5) Fig 1 is used to clamp the tailstock onto the machine bed. To loosen the tailstock sleeve loosen handle (7) then you can turn the hand wheel (6) so the sleeve can telescopically move forward and backward. Each scale on the dial indicator is for 0.05mm. Once the tail stock sleeve is at the desired position you must remember to tighten handle (7) again. You can adjust the horizontal of the tailstock and the axis of the spindle by using the two screws in the front and of the pad under the tailstock.

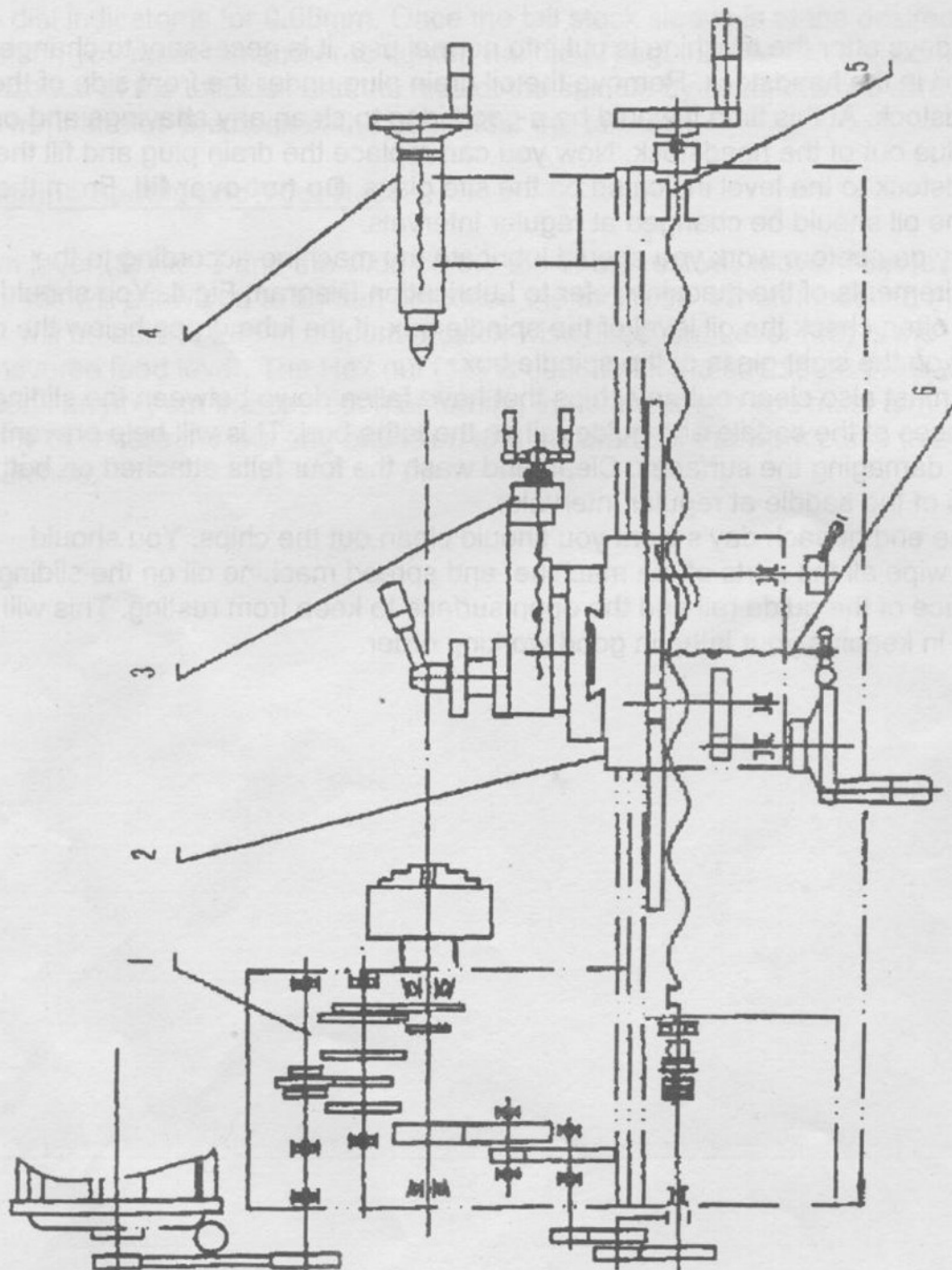
Machine Saddle and Tool Rest

Turn lever (8) Fig. 1 and the slide on the top of the rest will move. Turn lever (9) and this will allow tighten or loosen the tool rest. When loosened the tool rest will be able to turn in a counter clock-wise direction. Lever (10) is the transverse feed lever. The Hex nut (11) is used to fix the saddle on the bed. When carrying out the operation of turning the end surface you must turn the nut tightly to assure the working precision and accuracy of the work piece to be machined.

MAINTENANCE AND LUBRICATION

You must always maintain your Craftex B2227L Lathe to ensure a high working accuracy and long life.

1. Ten days after the machine is put into normal use, it is necessary to change the oil in the headstock. Remove the oil drain plug under the front side of the headstock. At this time it would be a good idea to clean any shavings and or residue out of the headstock. Now you can replace the drain plug and fill the headstock to the level indicated on the site glass. **Do not over fill.** From then on the oil should be changed at regular intervals.
2. Every day before work you should lubricate the machine according to the requirements of the machine refer to Lubrication Diagram Fig.4. You should also often check the oil level of the spindle box. If the lube drops below the oil level on the sight glass of the spindle box.
3. You must also clean out any chips that have fallen down between the sliding surfaces of the saddle and guide rail on the lathe bed. This will help prevent it from damaging the surfaces. Clean and wash the four felts attached on both ends of the saddle at regular intervals.
4. At the end of each day's work you should clean out the chips. You should also wipe all the parts of the machine, and spread machine oil on the sliding surface of the guide rail and the open surface to keep from rusting. This will help in keeping your lathe in good working order.



LUBRICATION POISITIONS DIAGRAM

Table 2 Description of Gear, Screw, nut used in all parts of the Machine

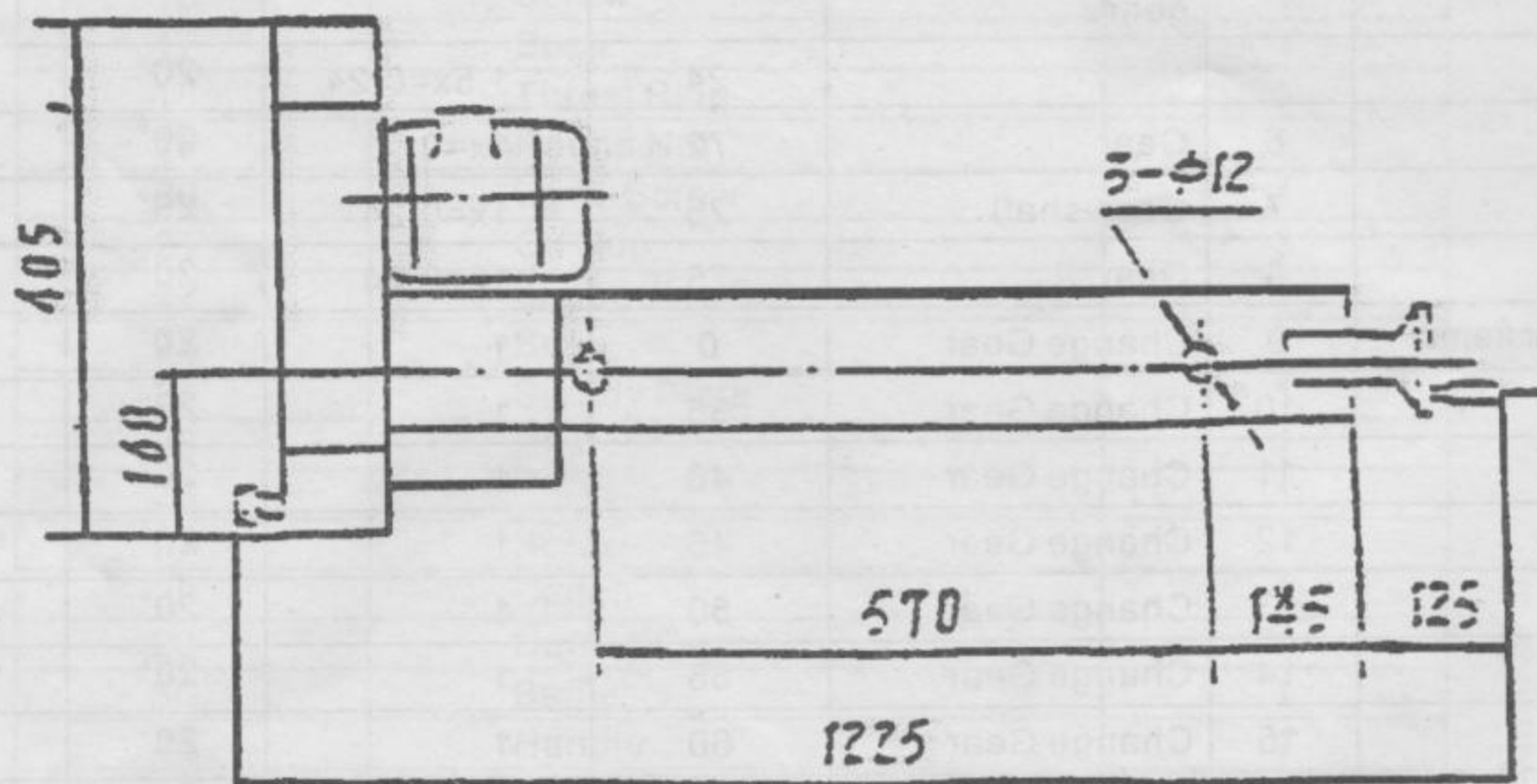
TABLE 2

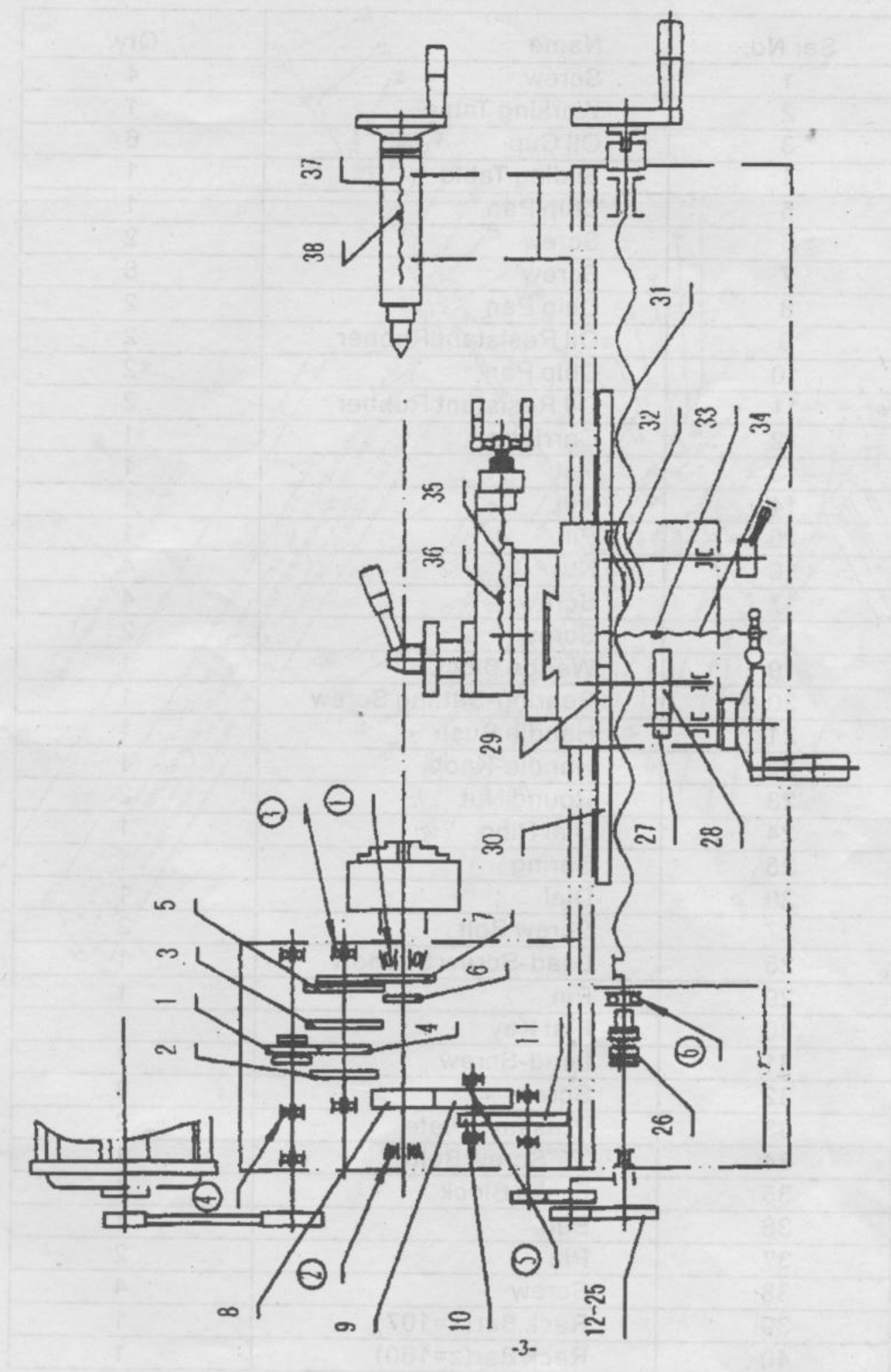
Part	ser No in Fig	Item	No of tooth No of helix	Module screw pitch ceffident of change position	Angle of press angle of screw	Material remarks
Spindle	1	Three connecting gear	23	1.5x=0.28	20°	45
			45	1.5x=0	20°	45
			34	1.5x=0.10	20°	45
	2	Gear	66	1.5x=0.1	20°	45
	3	Gear	55	1.5x=0.1	20°	45
	4	Gear	44	1.5x=0	20°	45
	5	Double-connecting gear	58	1.5x=0.15	20°	45
			24	1.5x=0.24	20°	45
	6	Gear	72	1x=0	20°	45
	7	Gear-shaft	25	1x=0.24	20°	45
	8	Gear	75	1x=0.24	20°	45
Gear frame	9	Change Gear	0	1	20°	45
	10	Change Gear	35	1	20°	45
	11	Change Gear	40	1	20°	45
	12	Change Gear	45	1	20°	45
	13	Change Gear	50	1	20°	45
	14	Change Gear	55	1	20°	45
	15	Change Gear	60	1	20°	45
	16	Change Gear	65	1	20°	45
	17	Change Gear	70	1	20°	45
	18	Change Gear	75	1	20°	45
	19	Change Gear	10	1	20°	45
	20	Change Gear	110	1	20°	45
	21	Change Gear	120	1	20°	45
	22	Change Gear	127	1	20°	45
Feed box	23	clutch	7		20°	45
Saddie apron	24	Gear shaft	15	1	20°	45

Continued Table #2

	25	Gear	53	1	20°	45
	26	Gear shaft	13	1.5	20°	45
	27	Gear rack	107	1.5	20°	45
	28	Leadscrew	1	3	30°	45
	29	Nut	1	3	30°	ZQSn6-6-3
Saddle	30	Screw	1	2(left hand rotation)	30°	45
	31	Nut	1	2(left hand rotation)	30°	ZQSn6-6-3
tool rest	32	Screw	1	2	30°	45
	33	Nut	1	2	30°	ZQSn6-6-3
tailstak	34	Screw	1	2(left hand rotation)	30°	45
	35	nut	1	2(left hand rotation)	30°	ZQSn6-6-3

Fig.5 Draining of bench Lathe



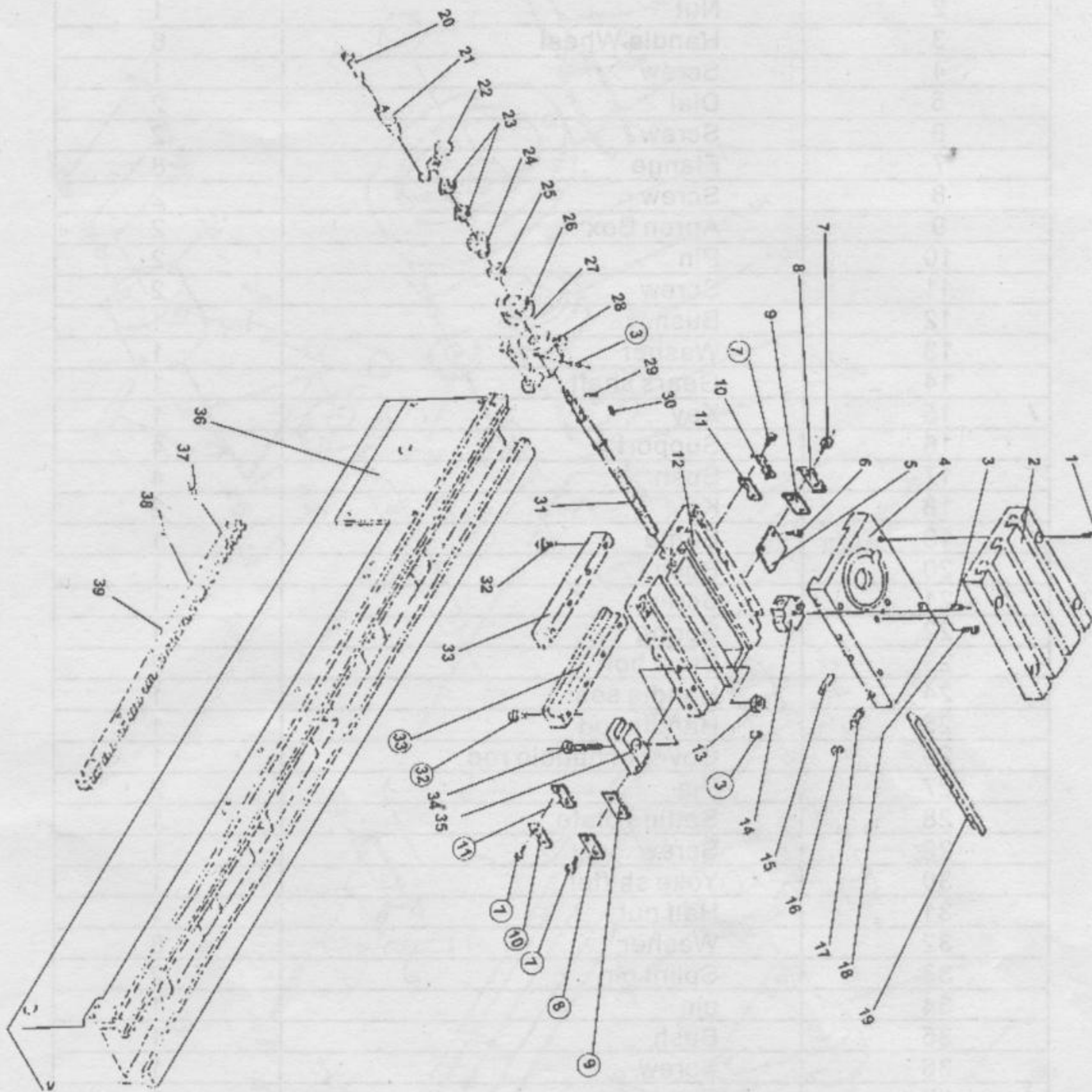


Transmission system of the B2227L Lathe

BED & CARRIAGE PARTS FOR BB25(B2227L)

Ser No.	Name	Qty.
1	Screw	4
2	Working Table	1
3	Oil Cup	6
4	Sliding Table	1
5	Chip Pan	1
6	Screw	2
7	Screw	8
8	Chip Pan	2
9	Oil Resistant Rubber	2
10	Chip Pan	2
11	Oil Resistant Rubber	2
12	Carriage	1
13	Nut	1
14	Nut	1
15	Pin	1
16	Nut	4
17	Screw	4
18	Screw	2
19	Wedge Block	1
20	Bearing-Setting Screw	1
21	Handle Bush	1
22	Handle-Knob	1
23	Round Nut	2
24	Dial Ring	1
25	Spring	1
26	Dial	1
27	Screw Bolt	2
28	Lead-Screw Support	1
29	Pin	1
30	Flat Key	1
31	Lead-Screw	1
32	Screw	8
33	Pressure Plate	2
34	"T" Screw Bolt	1
35	Brake Block	1
36	Bed	1
37	Pin	2
38	Screw	4
39	Rack Bar(z=107)	1
40	Rack Bar(z=160)	1

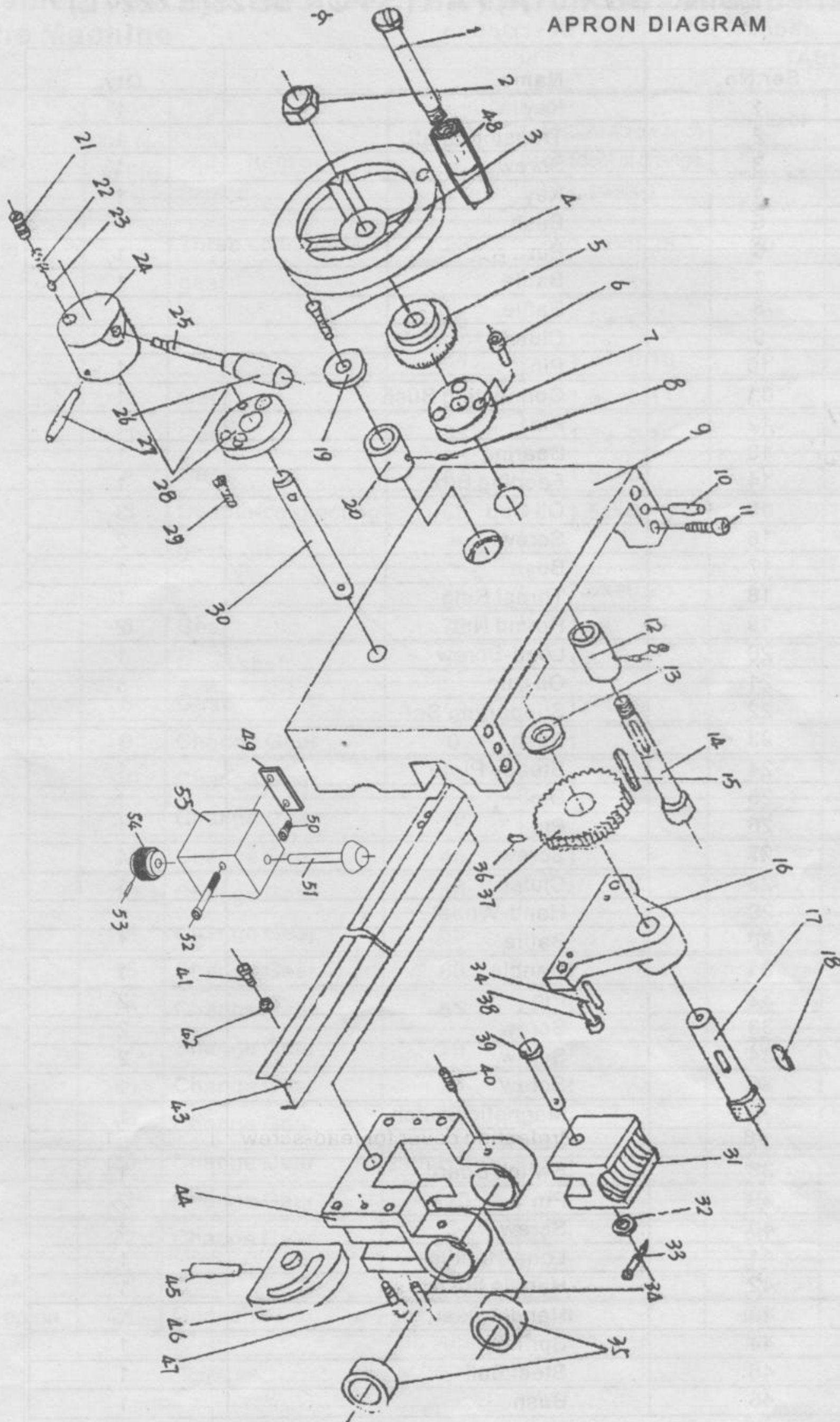
BED AND CARRIAGE DIAGRAM



APRON PARTS FOR BB25 (B2227L)

Index No.	Description	Qty.
1	Handle	4
2	Nut	1
3	Handle Wheel	6
4	Screw	1
5	Dial	2
6	Screw	2
7	Flange	8
8	Screw	2
9	Apron Box	2
10	Pin	2
11	Screw	2
12	Bush	1
13	Washer	1
14	Gears shaft	1
15	Key	1
16	Support	4
17	Bush	4
18	Key	2
19	Baffle	1
20	Bush	1
21	Screw	1
22	Spring	1
23	Steel bolt	2
24	Handle seat	1
25	Handle rod	1
26	Cover of handle rod	1
27	Pin	2
28	Setting plate	1
29	Screw	1
30	Yoke shifter	1
31	Half nut	1
32	Washer	8
33	Splint pin	2
34	pin	1
35	Bush	1
36	Screw	1
37	Gear	2
38	Screw	4
39	Pin soft	1
40	Screw	1
41	Screw	2
42	Washer	2
43	Protecting cover for lead-screw	1
44	lead-screw pedestal	1
45	pin	1
46	Cam	1
47	Screw	4
48	Handle Bush	1
49	Washer block	1
50	Hexagon head screw	1
51	Shaft threads dial	1
52	Hexagon head screw	1
53	Taper Pin	1
54	Gear	1
55	Threads dial shell	1

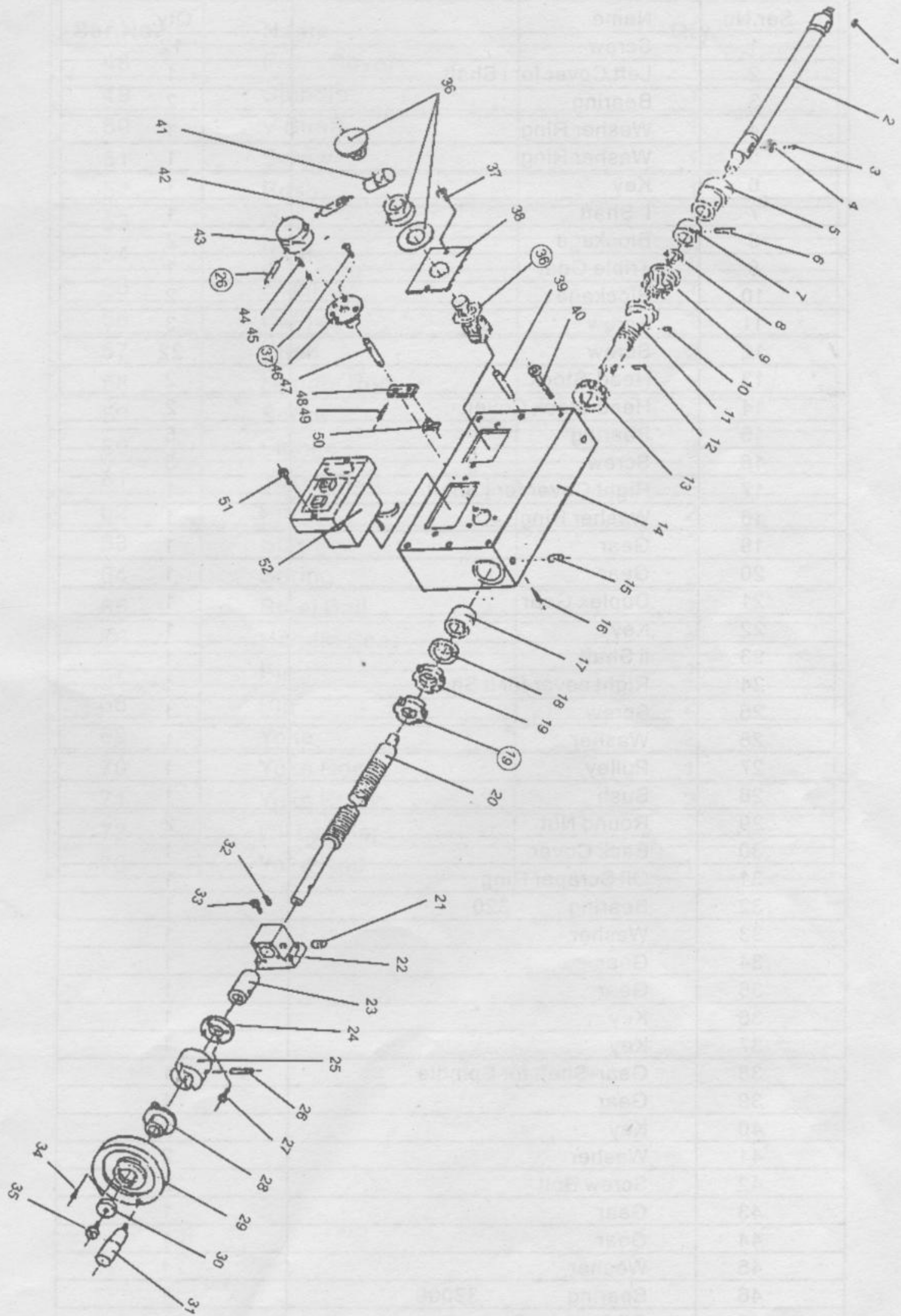
APRON DIAGRAM



FEEDING BOX(01A) PARTS FOR BB25(B2227L)

Ser.No.	Name	Qty.
1	Key	1
2	Transmit Shaft	1
3	Screw	1
4	Key	1
5	Bush	1
6	Pin	1
7	Baffle	1
8	Baffle	1
9	Clutch	1
10	Pin	1
11	Connecting Bush	1
12	Pin	1
13	Bearing	1
14	Feeding Box	1
15	Oil Cup	3
16	Screw	2
17	Bush	1
18	Thrust Ring	1
19	Round Nut	2
20	Lead-Screw	1
21	Oil Cup	3
22	Supporting Set	1
23	Bush	1
24	Steady Plate	1
25	Dial	1
26	Pin	1
27	Screw	4
28	Clutch	1
29	Hand-Wheel	1
30	Baffle	1
31	Handle	1
32	Pin	2
33	Screw	2
34	Screw	2
35	Screw	1
36	Magnetic Switch	1
37	Screw	5
38	Switch Board	1
39	Pin	2
40	Screw	4
41	Long-Handle	1
42	Handle bush	1
43	Handle Seat	1
44	Spring	1
45	Steel Ball	1
46	Bush	1

FEEDING BOX(01A)



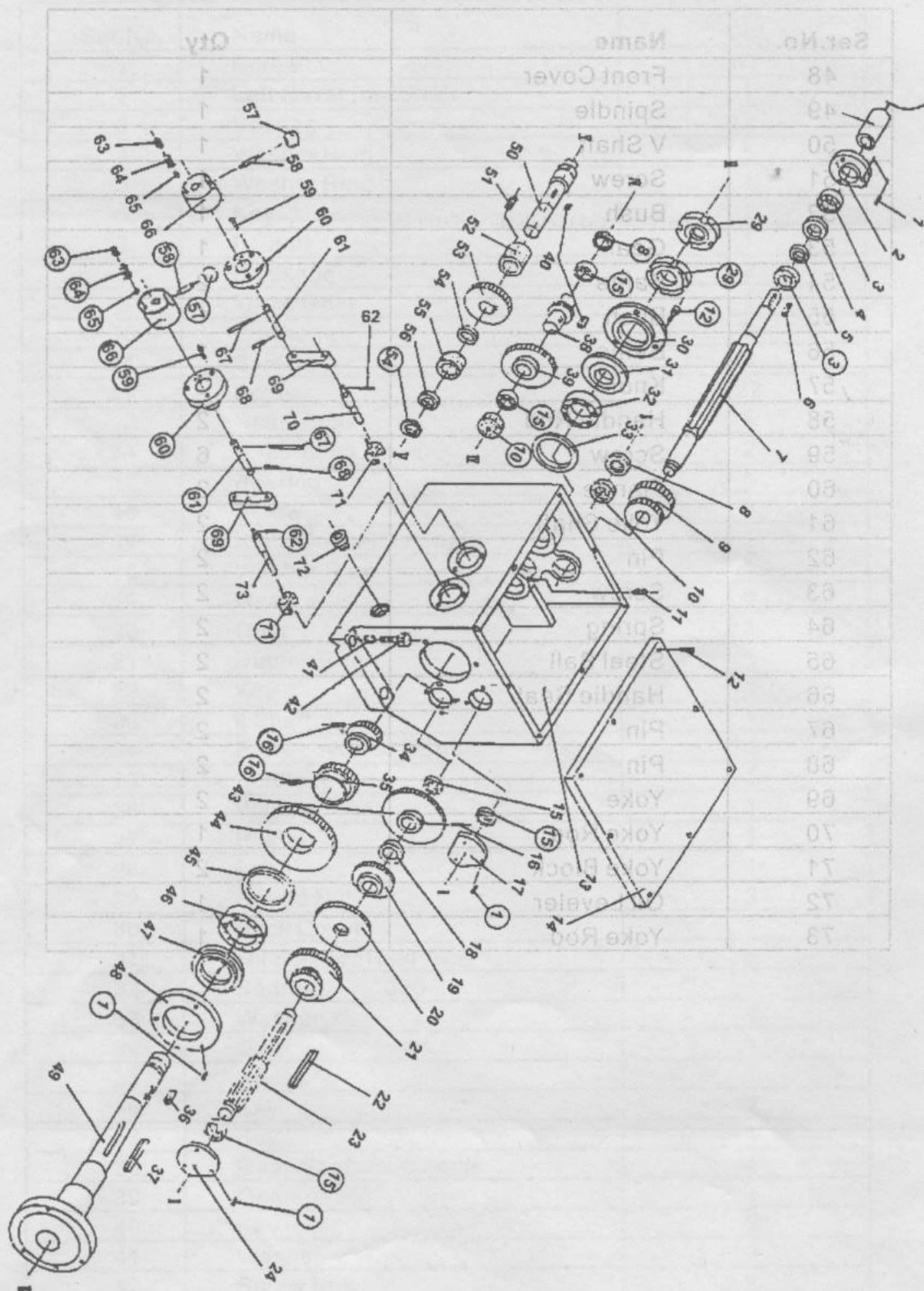
HEAD-STOCK PARTS FOR BB25 (B2227L)

Ser.No.	Name	Qty.
1	Screw	12
2	Left Cover for I Shaft	1
3	Bearing	2
4	Washer Ring	1
5	Washer Ring	1
6	Key	1
7	I Shaft	1
8	Blockage	2
9	Triple Gear	1
10	Blockage	2
11	Screw	3
12	Screw	22
13	Head-Stock	2
14	Head-stock Cover	2
15	Bearing	5
16	Screw	3
17	Right Cover for I Shaft	1
18	Washer Ring	1
19	Gear	1
20	Gear	1
21	Duplex Gear	1
22	Key	1
23	II Shaft	1
24	Right cover for II Shaft	1
25	Screw	1
26	Washer	1
27	Pulley	1
28	Bush	1
29	Round Nut	2
30	Back Cover	1
31	Oil Scraper Ring	1
32	Bearing 320	1
33	Washer	1
34	Gear	1
35	Gear	1
36	Key	1
37	Key	1
38	Gear-Shaft for Spindle	1
39	Gear	1
40	Key	2
41	Washer	2
42	Screw Bolt	2
43	Gear	1
44	Gear	1
45	Washer	1
46	Bearing 32009	1
47	Oil Scraper Ring	1

HEAD-STOCK PARTS FOR BB25(B2227L)

Ser.No.	Name	Qty.
48	Front Cover	1
49	Spindle	1
50	V Shaft	1
51	Screw	1
52	Bush	1
53	Gear	1
54	Baffle	2
55	Bush	1
56	Baffle	1
57	Knob	2
58	Handle Rod	2
59	Screw	6
60	Flange	2
61	Yoke Shaft	2
62	Pin	2
63	Screw	2
64	Spring	2
65	Steel Ball	2
66	Handle Seat	2
67	Pin	2
68	Pin	2
69	Yoke	2
70	Yoke Rod	1
71	Yoke Block	2
72	Oil Leveler	1
73	Yoke Rod	1

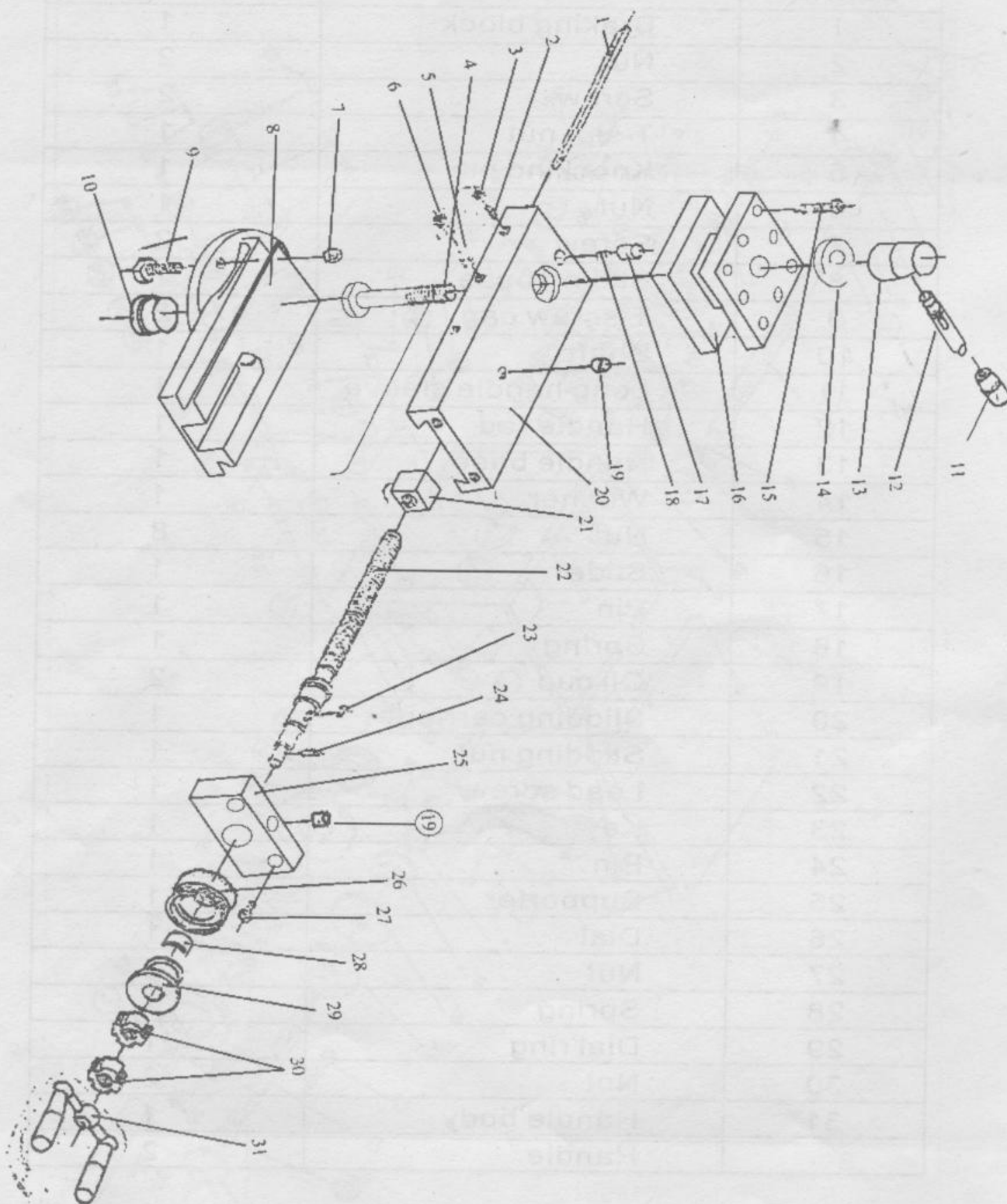
HEADSTOCK DIAGRAM



COMPOUND SLIDE PARTS FOR BB25 (B2227L)

Ser.No.	Name	Qty.
1	Braking block	1
2	Nut	2
3	Screw	2
4	T-slot nut	1
5	Knocking pin	1
6	Nut	1
7	Screw	2
8	Sliding base	1
9	T-screw cap	2
10	Shaft	1
11	Long handle sleeve	1
12	Handle rod	1
13	Handle base	1
14	Washer	1
15	Nut	8
16	Slide	1
17	Pin	1
18	Spring	1
19	Oil cup	2
20	Slidding carriage	1
21	Slidding nut	1
22	Lead screw	1
23	Key	1
24	Pin	1
25	Supporter	1
26	Dial	1
27	Nut	2
28	Spring	1
29	Dial ring	1
30	Nut	2
31	Handle body	1
	Handle	2

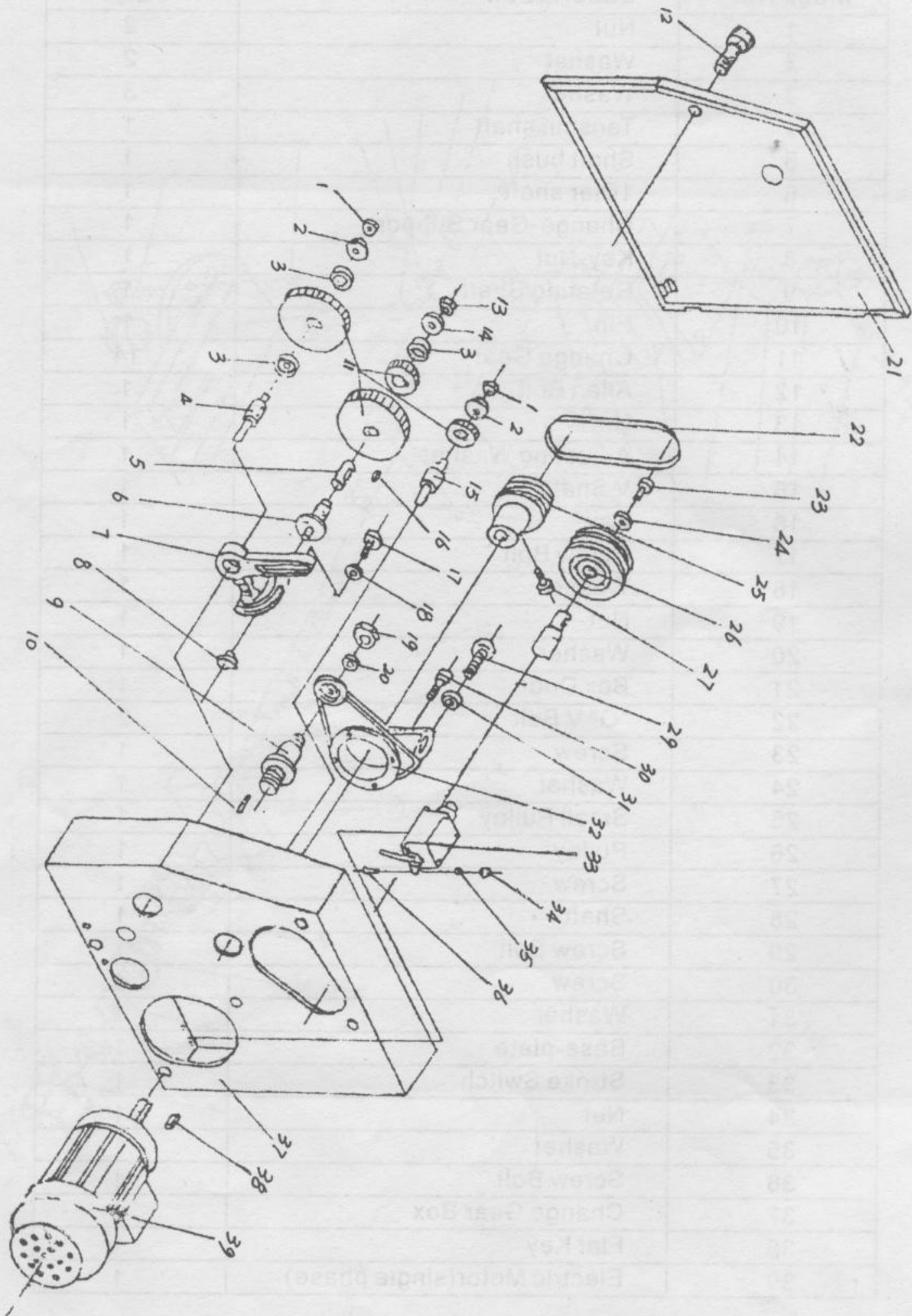
COMPOUND SLIDE DIAGRAM



CHANGE GEAR BOX PARTS FOR BB25 (B2227L)

Index No.	Description	Qty.
1	Nut	2
2	Washer	2
3	Washer	3
4	Transmit shaft	1
5	Shaft bush	1
6	1Dler shaft	1
7	Change-Gear Support	1
8	Key-Nut	1
9	Rotating Shaft	1
10	Pin	1
11	Change Gear	14
12	Allen Bolt	1
13	Nut	1
14	Adjusting Washer	1
15	V Shaft	1
16	Key	1
17	Screw Bolt	1
18	Washer	1
19	Nut	1
20	Washer	1
21	Box Door	1
22	"O" V Belt	2
23	Screw	1
24	Washer	1
25	Small Pulley	1
26	Pulley	1
27	Screw	1
28	Shaft	1
29	Screw Bolt	1
30	Screw	4
31	Washer	1
32	Base-plate	1
33	Stroke Switch	1
34	Nut	1
35	Washer	1
36	Screw Bolt	1
37	Change Gear Box	1
38	Flat Key	1
39	Electric Motor(single phase)	1

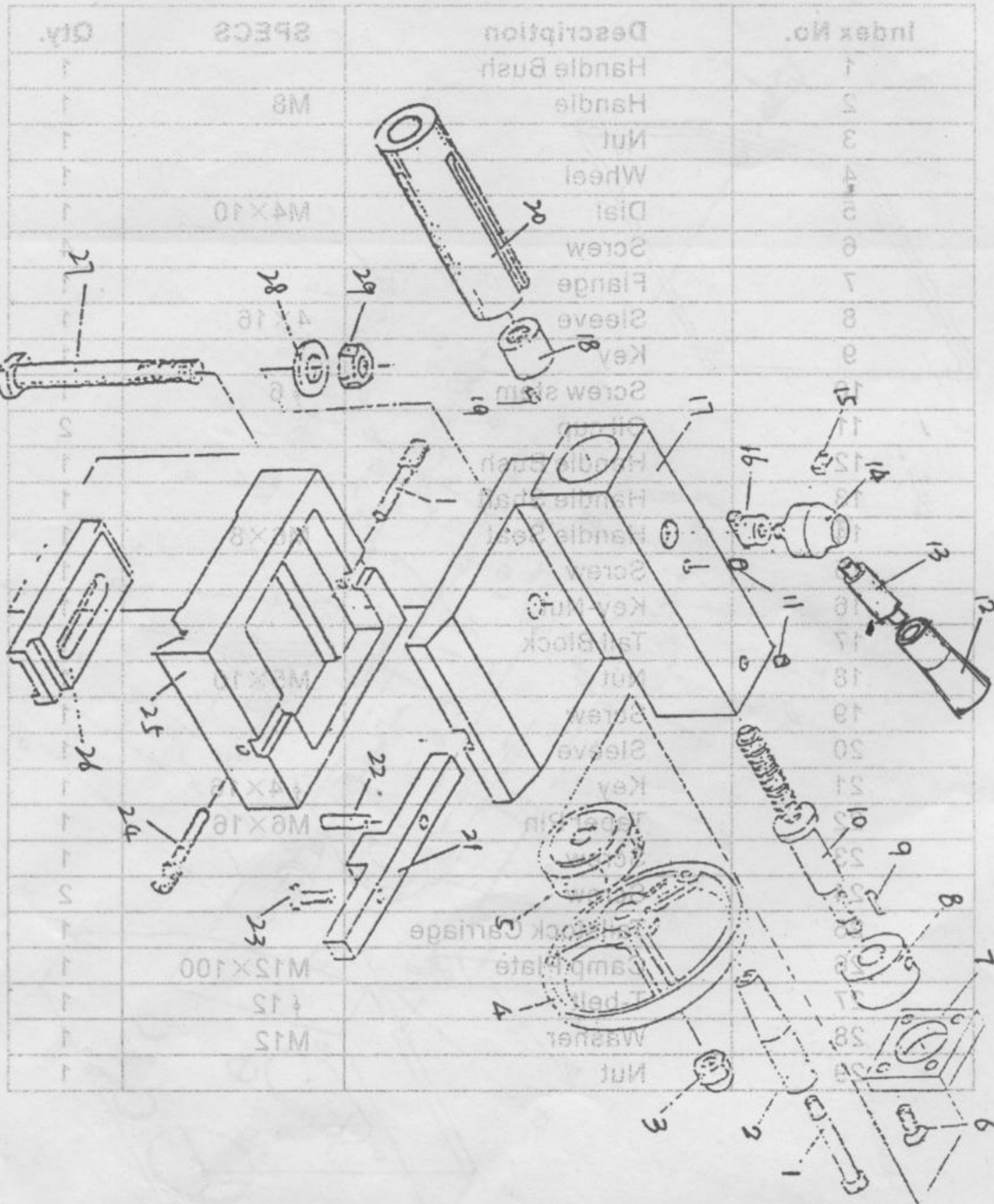
CHANGE GEAR BOX DIAGRAM



TAILSTOCK PARTS FOR BB25 (B2227L)

Index No.	Description	SPECS	Qty.
1	Handle Bush		1
2	Handle	M8	1
3	Nut		1
4	Wheel		1
5	Dial	M4×10	1
6	Screw		4
7	Flange		1
8	Sleeve	4×16	1
9	Key		1
10	Screw stem	φ 6	1
11	Oil cup		2
12	Handle Bush		1
13	Handle Shaft		1
14	Handle Seat	M6×8	1
15	Screw		1
16	Key-Nut		1
17	Tail Block		1
18	Nut	M5×10	1
19	Screw		1
20	Sleeve		1
21	Key	φ 4×16	1
22	Taper Pin	M6×16	1
23	Screw		1
24	Screw		2
25	Tailstock Carriage		1
26	Camp Plate	M12×100	1
27	T-belt	φ 12	1
28	Washer	M12	1
29	Nut		1

TAILSTOCK DIAGRAM (B25237)





CRAFTEX 2 YEAR LIMITED WARRANTY

Craftex warrants every product to be free from defects in materials and agrees to correct such defects where applicable. This warranty covers **two years** for parts and 90 days for labour (unless specified otherwise), to the original purchaser from the date of purchase but does not apply to malfunctions arising directly or indirectly from misuse, abuse, improper installation or assembly, negligence, accidents, repairs or alterations or lack of maintenance.

Proof of purchase is necessary.

All warranty claims are subject to inspection of such products or part thereof and Craftex reserves the right to inspect any returned item before a refund or replacement may be issued.

This warranty shall not apply to consumable products such as blades, bits, belts, cutters, chisels, punches etceteras. Craftex shall in no event be liable for injuries, accidental or otherwise, death to persons or damage to property or for incidental contingent, special or consequential damages arising from the use of our products.

RETURNS, REPAIRS AND REPLACEMENTS

To return, repair, or replace a Craftex product, you must visit the appropriate Busy Bee Tools showroom or call 1-800-461-BUSY. Craftex is a brand of equipment that is exclusive to Busy Bee Tools.

For replacement parts directly from Busy Bee Tools, for this machine, please call 1-800-461-BUSY (2879), and have your credit card and part number handy.

- All returned merchandise will be subject to a minimum charge of 15% for re-stocking and handling with the following qualifications.

Returns must be pre-authorized by us in writing.

- We do not accept *collect* shipments.
- Items returned for warranty purposes must be insured and shipped pre-paid to the nearest warehouse
- Returns must be accompanied with a copy of your original invoice as proof of purchase. Returns must be in an un-used condition and shipped in their original packaging a letter explaining your reason for the return. Incurred shipping and handling charges are not refundable.
- Busy Bee will repair or replace the item at our discretion and subject to our inspection.
- Repaired or replaced items will be returned to you pre-paid by our choice of carriers.
- Busy Bee reserves the right to refuse reimbursement or repairs or replacement if a third party without our prior authorization has carried out repairs to the item.
- Repairs made by Busy Bee are warranted for 30 days on parts and labour.
- Any unforeseen repair charges will be reported to you for acceptance prior to making the repairs.
- The Busy Bee Parts & Service Departments are fully equipped to do repairs on all products purchased from us with the exception of some products that require the return to their authorized repair depots. A Busy Bee representative will provide you with the necessary information to have this done.
- For faster service it is advisable to contact the nearest Busy Bee location for parts availability prior to bringing your product in for repairs.