CRAFTEX CX-SERIES

CX708
10” X 18” METAL LATHE

OWNER’S MANUAL

THREE YEAR 3 WARRANTY

CX708 - 10” × 18” METAL LATHE

INDEX

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 jewelry 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 judgment to safely use this machine.
- **DISCONNECT** the power source when changing tool bits and or any equipment.
- **ALWAYS** keep all safety guards in place and ensure their proper function.
- **ALWAYS** make sure that any tools used for adjustments are removed before operation the machine.
- **ALWAYS** secure your work with the appropriate clamps or vices.
- **ALWAYS** keep bystanders safely away while operating machinery.
- **THANGK SAFETY. WORK SAFETY.** Never attempt a procedure if it does not feel safe or comfortable.

CX708 - 10″× 18″ METAL LATHE

As part of the growing line of Craftex metalworking equipment, we are proud to offer the B2227L 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 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	500mm/20″
Max. Cutting Length	450mm/18″
Spindle Bore	27mm/1″
Taper Hole In Spindle	MT # 4
Range of Spindle Speeds	140-1700 RPM
Metric Thread Range	0.5-3.0 mm
Inch Thread Range	8-56 TPI
Max. Longitudinal Travel of Tool Slide	70mm/3″
Max. Transverse Travel of Cross Slide	115mm/4.5″
Taper of Tail Stock	MT # 2
Max. Travel of Tail stock Sleeve	70mm/3″
Number of Spindle Rotating Speeds	6 Speed Twin Belt Drive
Motor	3/4 HP 110V

Standard Accessories

1. 5″ 3 Jaw chuck with Reversible Jaws
2. 2 Centers MT 2 and MT 4
3. Metric change Gears
4. 3 Wrenches
5. 6 mm Allen Key
6. Tool Post Wrench

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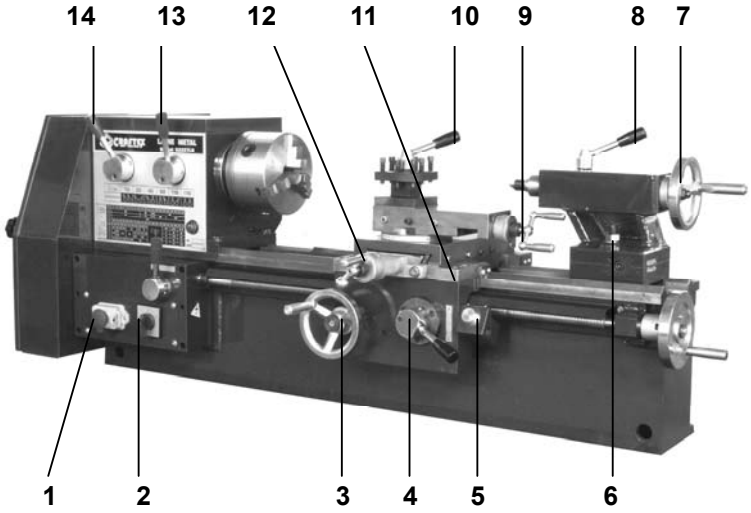
Installation & Lifting & Operation

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.



Ref.	Description
1	Emergency switch
2	Forward-stop-reverse switch
3	Saddle hand-wheel
4	Half nut lever
5	Threads Dial
6	Tailstock clamping nut
7	Tailstock hand-wheel

Ref.	Description
8	Tailstock clamping lever
9	Compound slide
10	Tool-post clamping lever
11	Carriage
12	Cross slide hand-wheel
13	Speed change handle I
14	Speed change handle II

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 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 down for all speeds until you reach 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 to speed or the direction of the lathe until the machine has come to 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.

Feed Box Continued

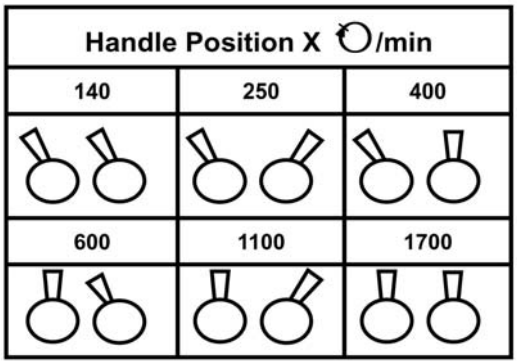


Fig. # 2 Handle Position for control spindle rotating speed

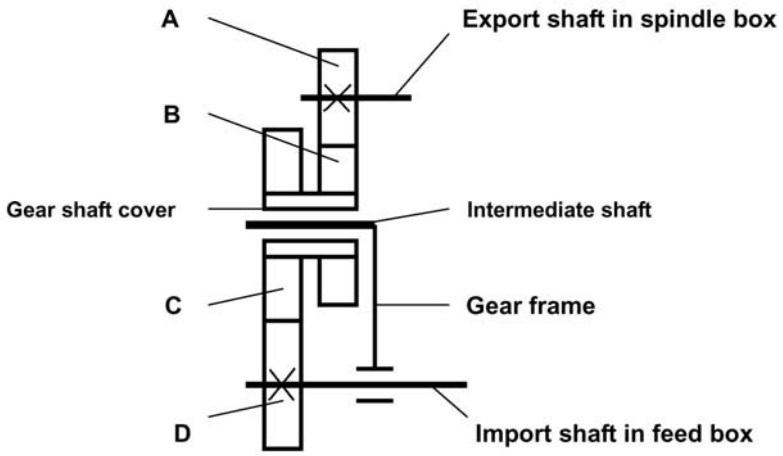
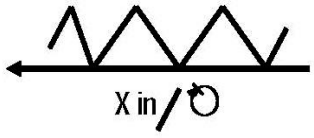


Fig. # 3 Diagram Sketch of gear transmission

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	60	80



in	0.0025	0.005
A	30	30
B	120	60
C	35	35
D	125	125

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 Table1. 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 at the back of the pad under the tailstock.

Machine Saddle and Tool Rest

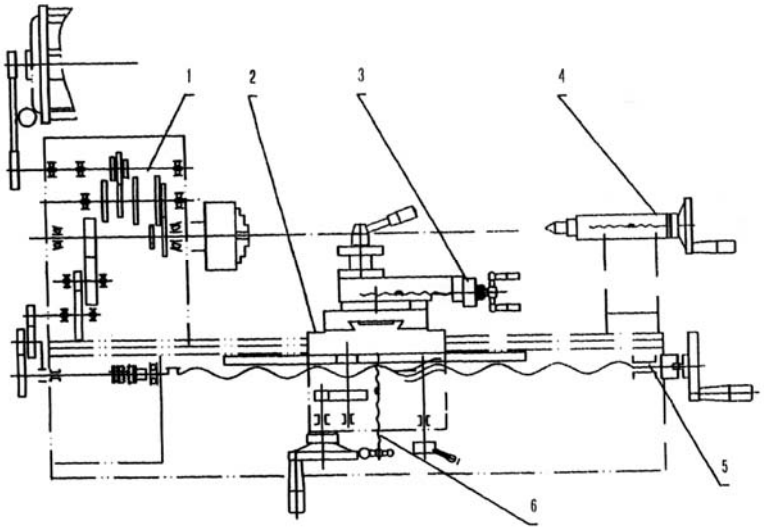
Turn lever (8) Fig. 1 and the slide on the top of the rest will move. Turn lever (9) and this will allow you to tighten or loosen the tool rest. When loosened the tool rest will be able to turn in a counter clock- wise direction. Lever (10) is the transverse feed lever. The Hex nut (11) is used to fix 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 CX708 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 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 side 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 surface 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.

At the ends 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 POSITIONS DIAGRAM

Table 2 Description of Gear, Screw, Nut Used in All Parts of the Machine

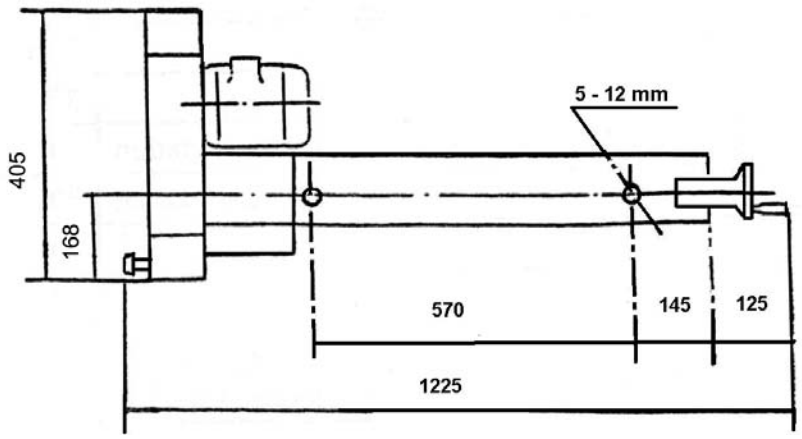
TABLE 2

Part	Ser No in Fig	Item	No of tooth No of helix	Module screw pitch ceffident of change positiion	Angle of Press Angle of screw	Material Remarks
Spindle	1	Three Connecting gear	23	1.5×=0.28	20°	45
			45	1.5×=0	20°	45
			34	1.5×=0.10	20°	45
	2	Gear	66	1.5×=0.1	20°	45
	3	Gear	55	1.5×=0.1	20°	45
	4	Gear	44	1.5×=0	20°	45
	5	Double-connecting gear	58	1.5×=0.15	20°	45
			24	1.5×=0.24	20°	45
	6	Gear	72	1×=0	20°	45
	7	Gear-shaft	25	1×=0.24	20°	45
	8	Gear	75	1×=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
Saddle apron	24	Gear-shaft	15	1	20°	45

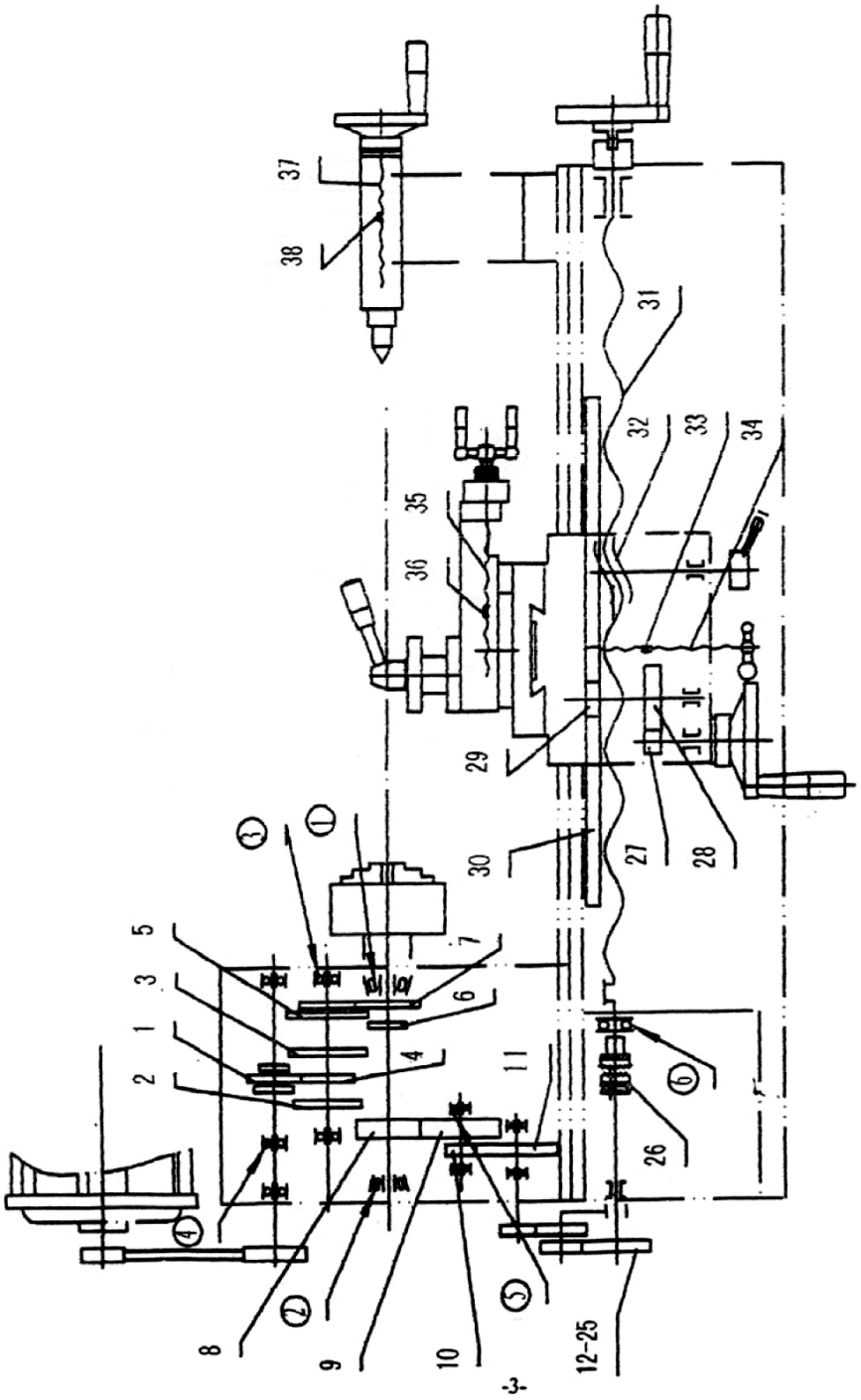
Continued Table #2

Part	Ser No in Fig	Item	No of tooth No of helix	Module screw pitch ceffident of change positiion	Angle of Press Angle of screw	Material Remarks
	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
Tailstock	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 B2227LN Lathe

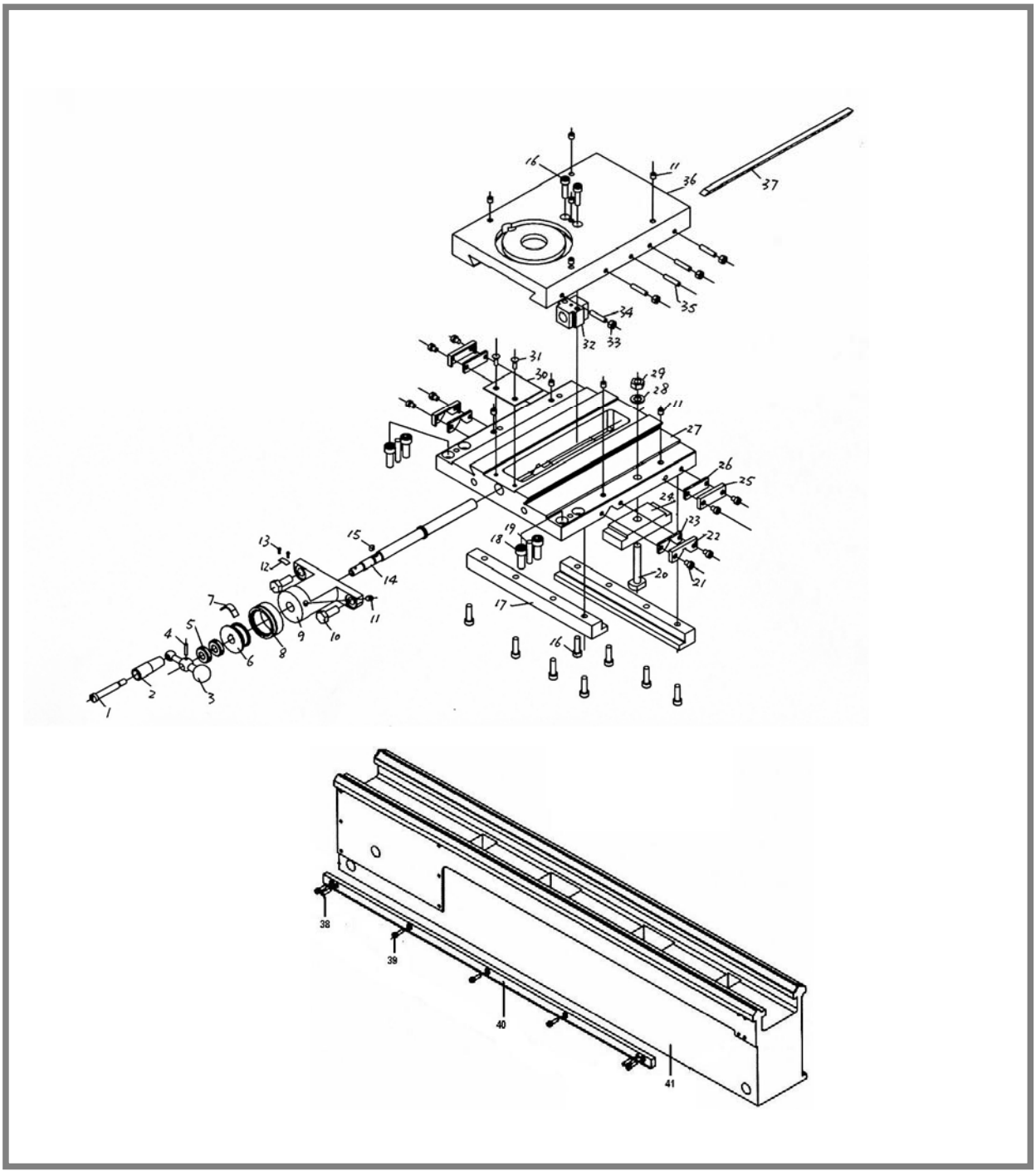


BED & CARRIAGE PARTS FOR B2227LN

Ser No.	Name	Qty.
1	Bearing Setting Screw	1
2	Handle Bush	1
3	Handle Knob	1
4	Pin	2
5	Round Nut	4
6	Dial Ring	1
7	Spring Sheet	2
8	Dial	1
9	Lead-Screw Support	1
10	Bolt	2
11	Oil Cup	1
12	Scale	1
13	Screw	4
14	Lead-Screw	1
15	Flat Kay	1
16	Screw	4
17	Clamping Plate	2
18	Screw	10
19	Round Pin	2
20	Screw for T Slot	8
21	Screw	8
22	Chip Pan	2
23	Oil Resistant Rubber	2
24	Brake Block	1
25	Chip Pan	2
26	Oil Resistant Rubber	2
27	Carriage	1
28	Flat Washer	1
29	Nut	1
30	Chip Pan	1
31	Screw	2
32	Nut	1
33	Screw M5	7
34	Screw M5 X 30	4
35	Pin	1
36	Sliding Table	1
37	Wedge Block	1
38	Pin	2

39		Screw	4
40		Rack Bar	1
41		Bed	1

BED AND CARRIAGE DIAGRAM

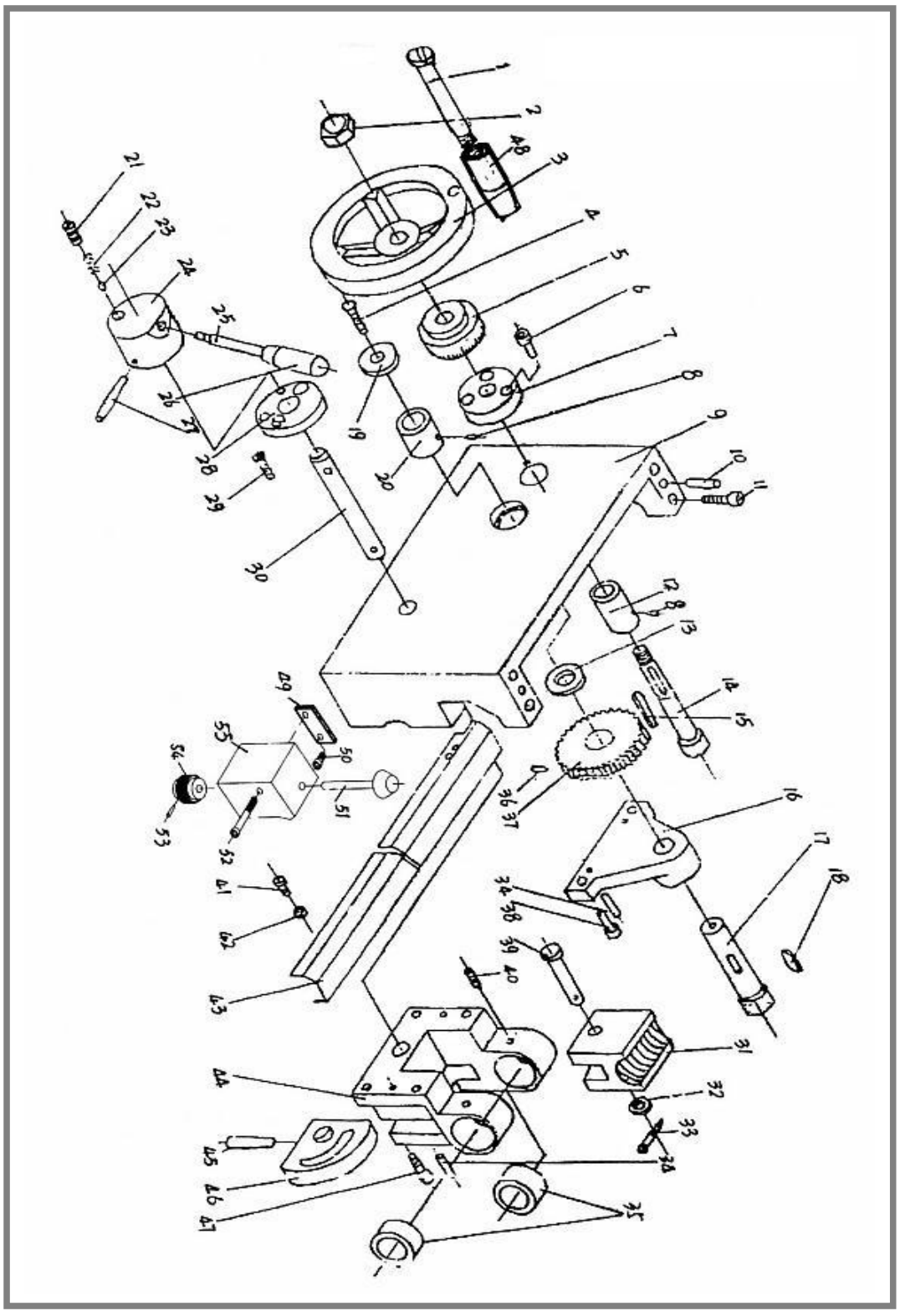


APRON PARTS FOR B2227LN

Ser No.	Name	Qty.
1	Nut	2
2	Washer	2
3	Washer	3
4	Transmit Shaft	1
5	Shaft Bush	1
6	Idler Shaft	1
7	Change Gear Support	1
8	Key-Nut	1
9	Rotating Shaft	1
10	Pin	1
11	Change Gear	14
12	Taper Pin	21
13	Star-Style Knob	1
14	Washer	1
15	Shaft	1
16	Bush	1
17	Taper Pin	1
18	Door Knob	1
19	Nut	1
20	Adjusting Washer	1
21	V Shaft	1
22	Key	1
23	Screw Bolt	1
24	Washer	1
25	Nut	1
26	Washer	1
27	Box Door	1
28	“O” V Belt	2
29	Screw	1
30	Washer	1
31	Small Pulley	1
32	Pulley	1
33	Screw	1
34	I Shaft	1
35	Screw Bolt	1
36	Screw	4
37	Washer	1
38	Base Plate	1
39	Stroke Switch	1
40	Nut	1
41	Washer	1
42	Screw Bolt	1

43	Change Gear Box Cover	1
44	Flat Key	1
45	Electric Motor (Single Phase)	1

APRON DIAGRAM

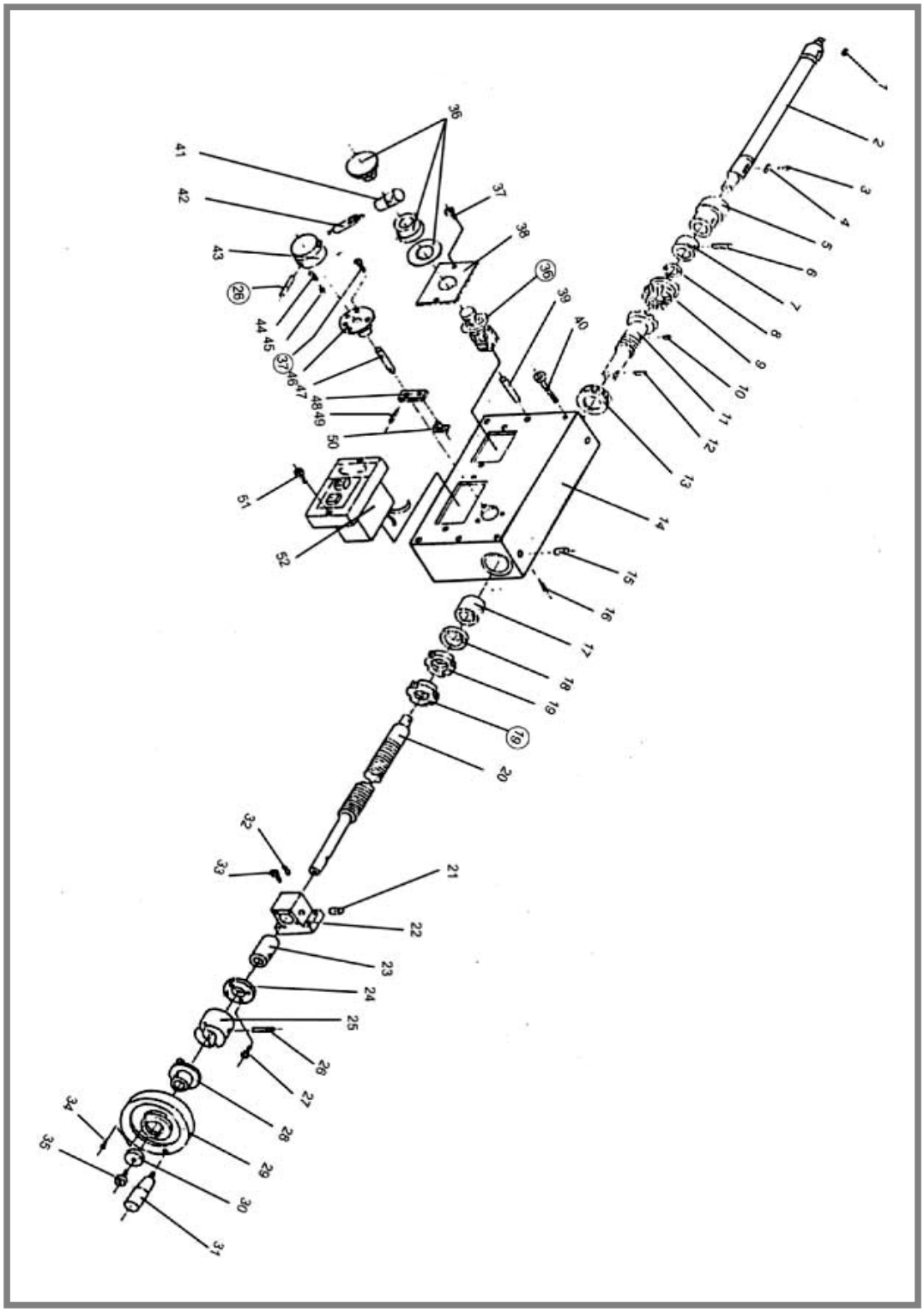


FEEDING BOX PARTS FOR CX708

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 cap	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 DIAGRAM



HEAD-STOCK PARTS FOR CX708

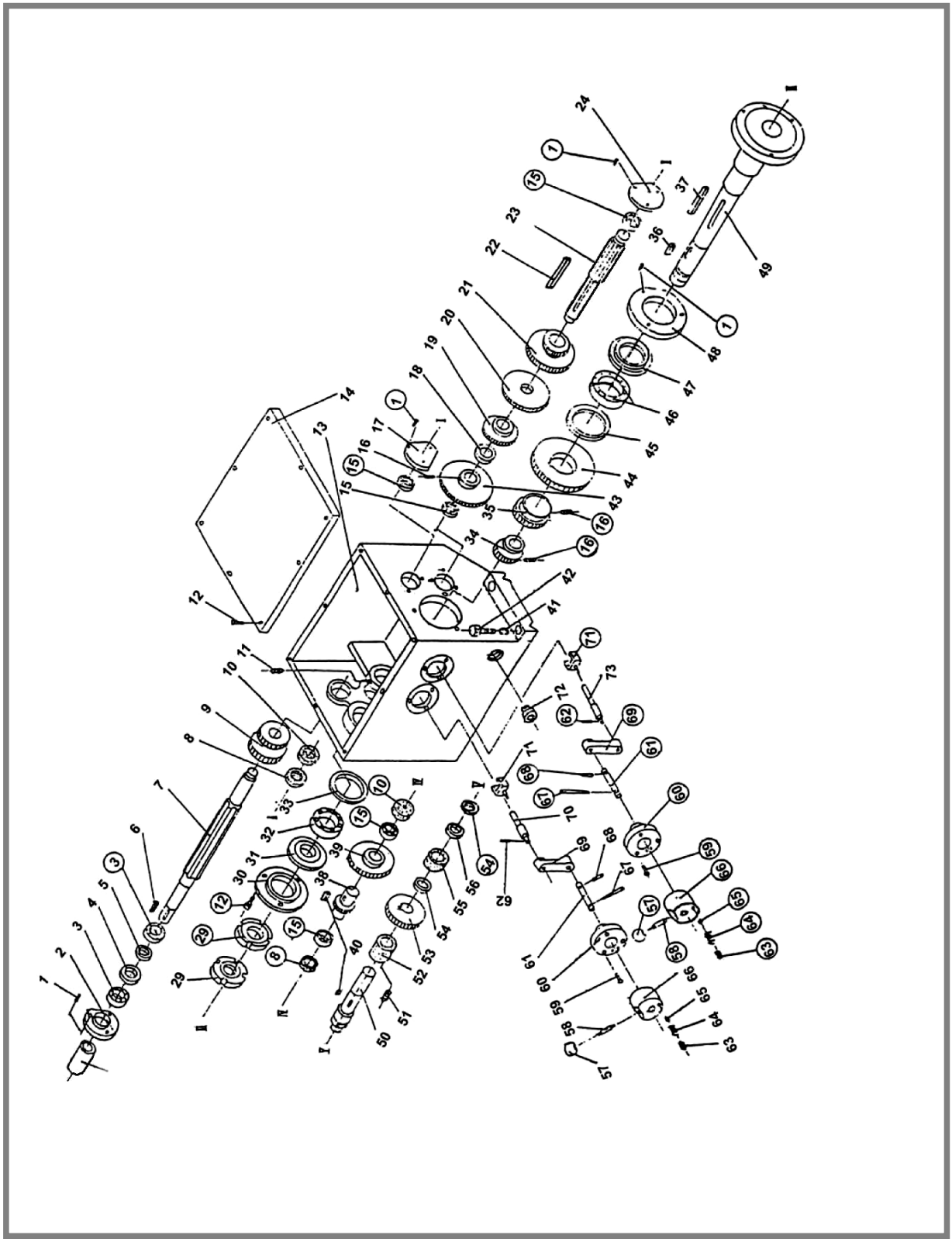
Ser No.	Name	Qty.
1	Screw	12
2	Left Cover for Shaft	1
3	Bearing	2
4	Washer Ring	1
5	Washer Ring	1
6	Key	1
7	shaft	1
8	Blockage	2
9	Triple Gear	1
10	Blockage	2
11	Screw	3
12	Screw	22
13	Head- Stock	2
14	Head- Stock Cover	2
15	Bearing	5
16	Screw	3
17	Right cover for 1 shaft	1
18	Washer Ring	1
19	Gear	1
20	Gear	1
21	Duplex Gear	1
22	Key	1
23	Shaft	1
24	Right Cover for 1 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

HEAD-STOCK PARTS FOR CX708

Ser No.	Name	Qty.
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
48	Front Cover	1
49	Spindle	1
50	□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

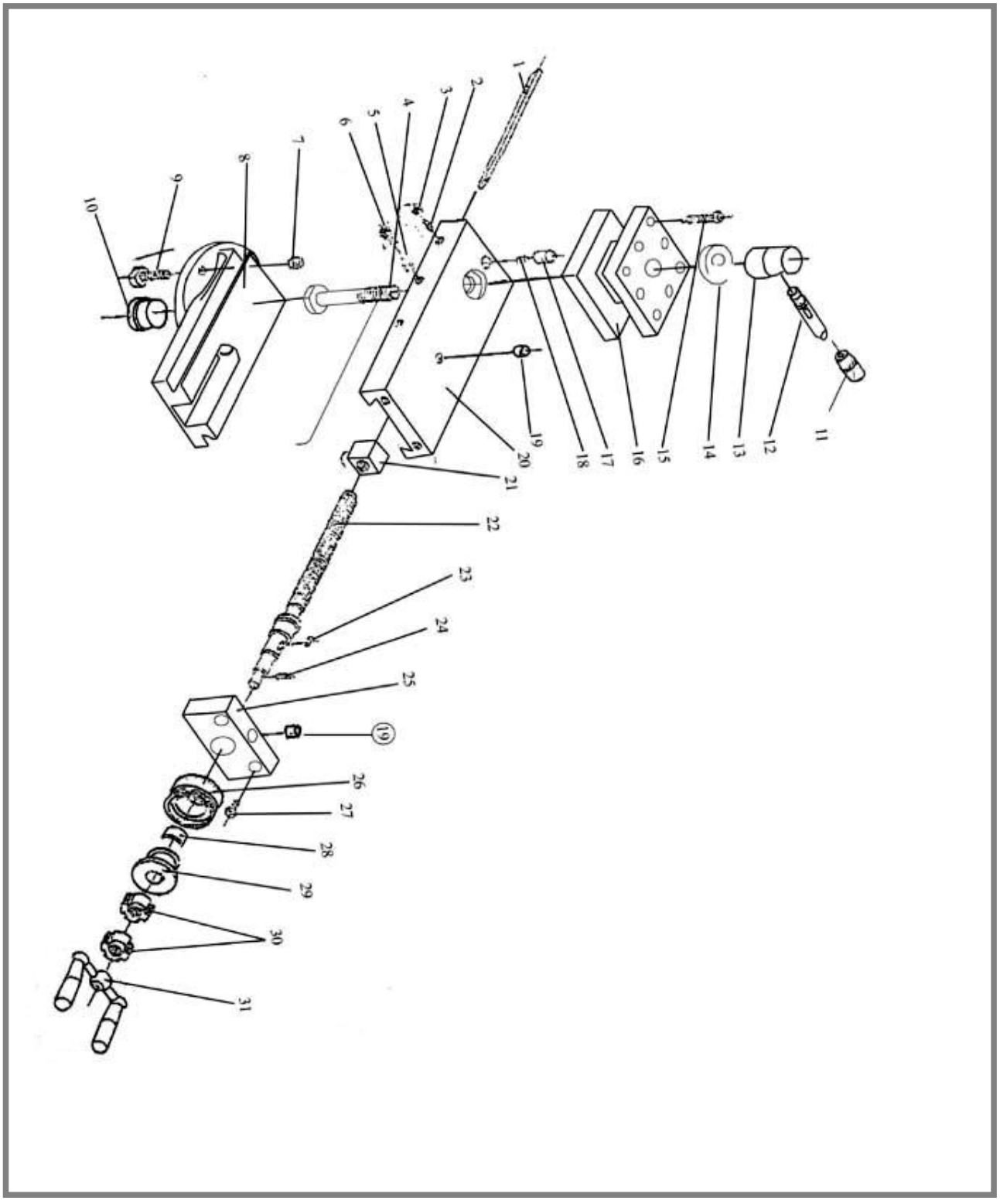
HEAD-STOCK DIAGRAM



COMPOUND SLIDE PARTS FOR B2227LN

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 Cap	2
20	Sliding Carriage	1
21	Sliding 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
32	Handle	2

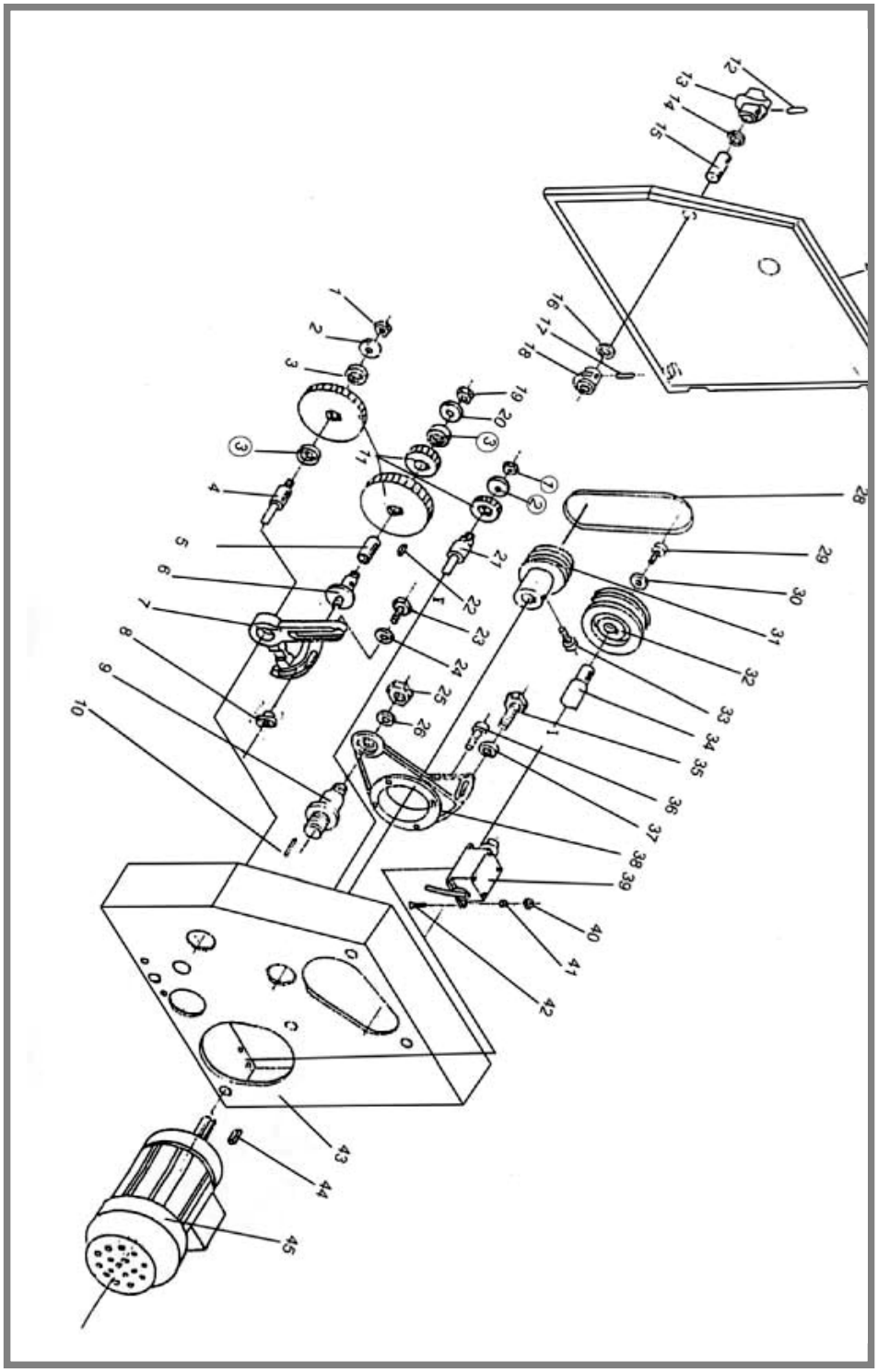
COMPOUND SLIDE DIAGRAM



CHANGE GEAR BOX PARTS FOR CX708

Ser No.	Name	Qty.
1	Nut	2
2	Washer	2
3	Washer	3
4	Transmit Shaft	1
5	Shaft Bush	1
6	1 Dler 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	11
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

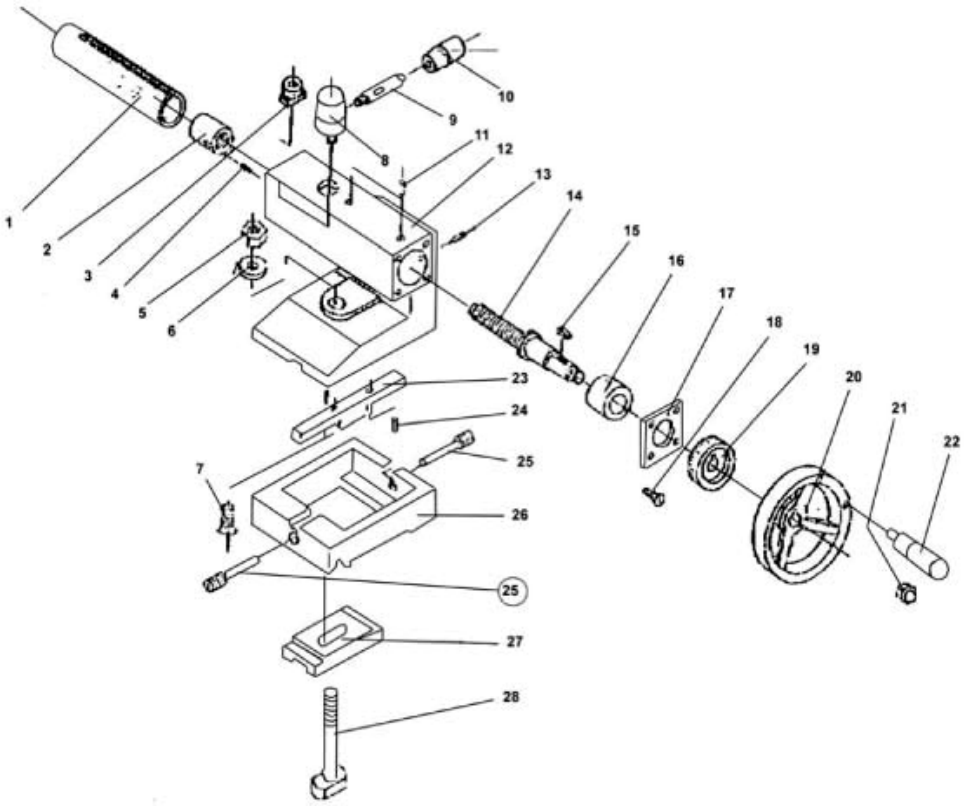
CHANGE GEAR BOX DIAGRAM



TAILSTOCK PARTS FOR PARTS FOR CX708

Index No.	Description	Qty.
1	Sleeve	1
2	Nut	1
3	Key-Nut	1
4	Screw	1
5	Nut	1
6	Washer	4
7	Screw	1
8	Handle Set	1
9	Handle Shaft	1
10	Handle Bush	1
11	Oil Cup	2
12	Tail Block	1
13	Screw	1
14	Tail Lead-screw	1
15	Key	1
16	Bush	1
17	Flange	1
18	Screw	1
19	Dial	1
20	Wheel	1
21	Nut	1
22	Handle	1
23	Key	1
24	Taper Pin	2
25	Screw	1
26	Tailstock Carriage	1
27	Clamp Plate	1
28	T Bolt	1

TAIL-STOCK DIAGRAM



Trouble Shooting

Trouble	Probable Cause	Remedy
Motor will not run	Defective ON / OFF switch or damaged power cord.	Replace defective parts
	Burned out motor	Have a qualified technician replace the motor
Lathe slows down while turning	V - belt loose	Adjust tension
Tailstock rocks back and Forth excessively	Adjusting screw is too loose	Adjust screw
Burning at tailstock end	Live center binding or dead center not lubricated	Check bearing on live center
		Add lubrication if using dead center

WARRANTY

CRAFTEX 3 YEARS LIMITED WARRANTY

Craftex warrants every product to be free from defects in materials and agrees to correct such defects where applicable. This warranty covers **three 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.