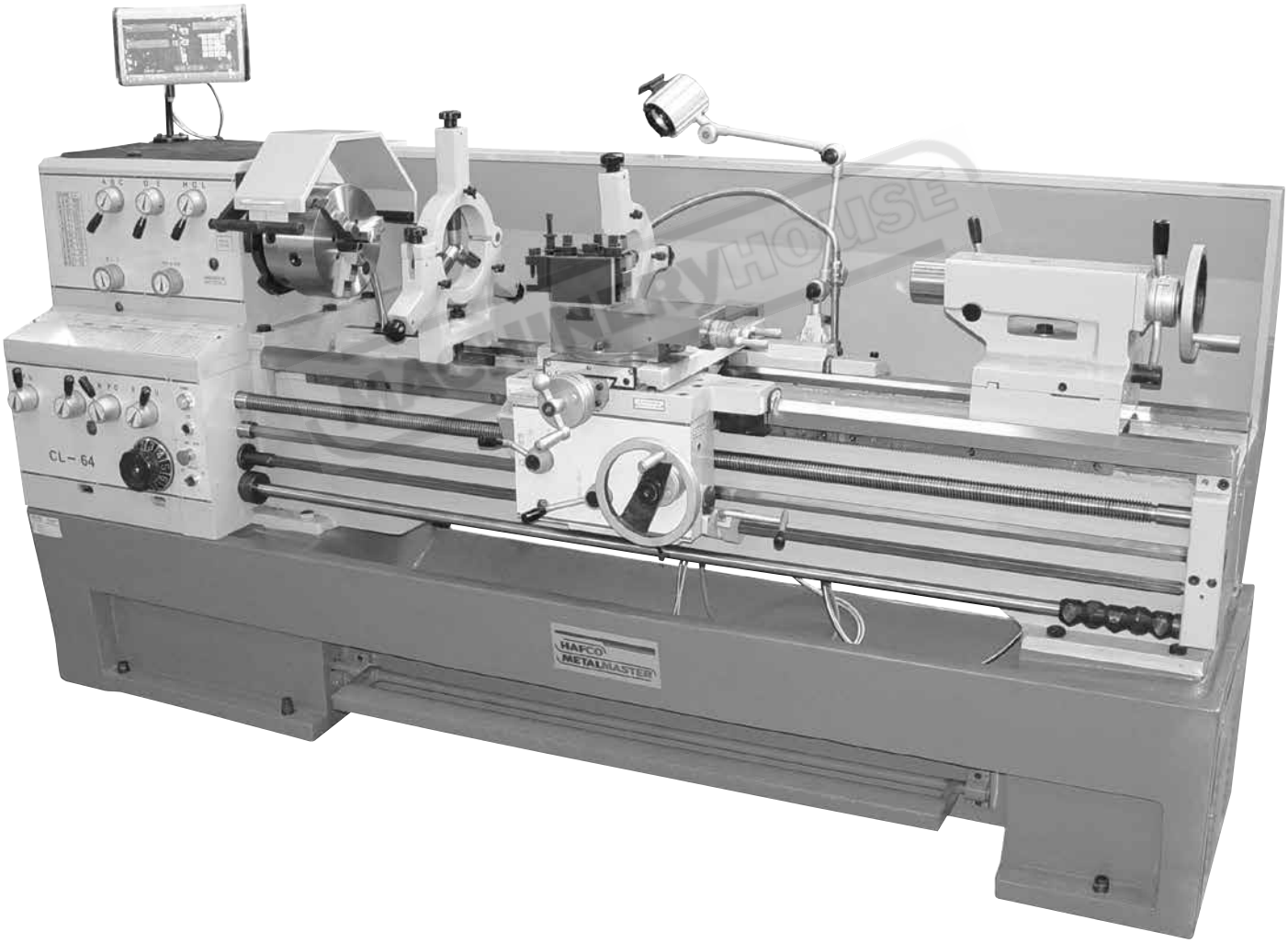
INSTRUCTION MANUAL

CL-64
Centre Lathe (415V)
470 x 1500mm Turning Capacity

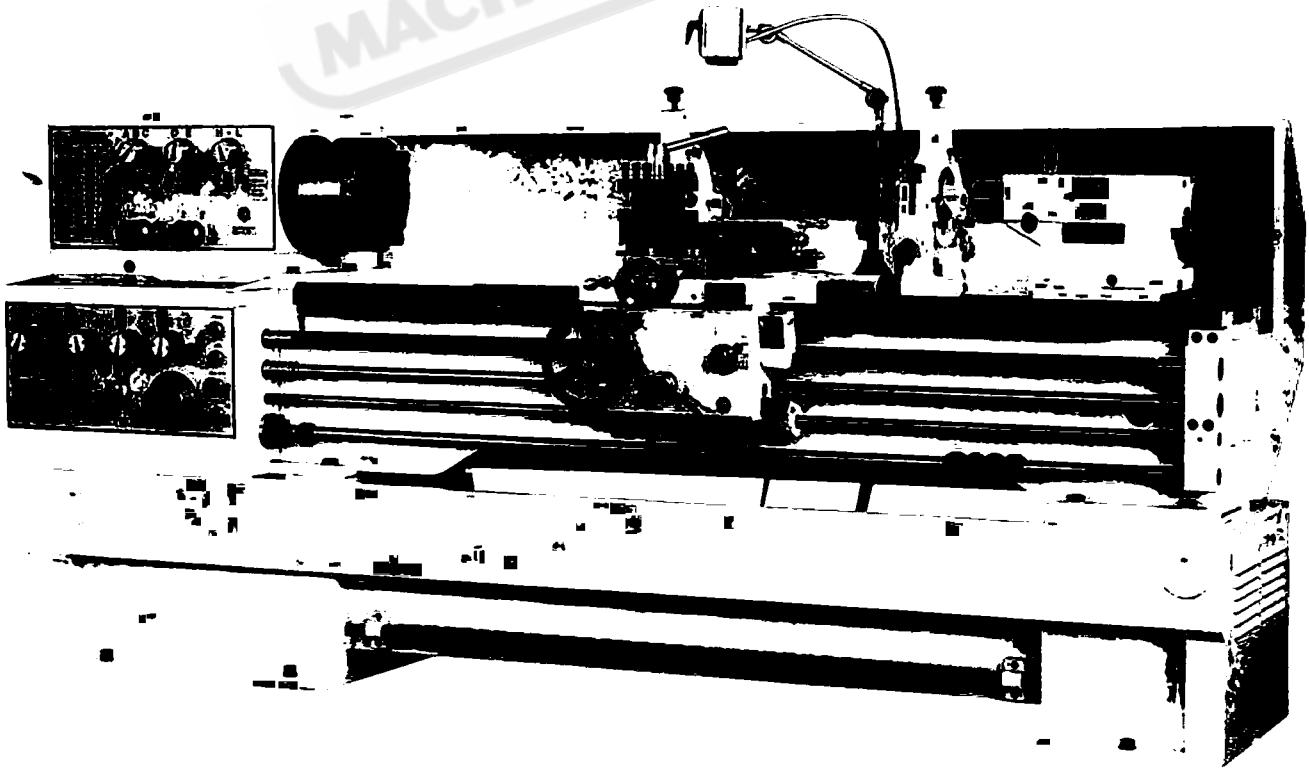


L582D

OPERATOR'S MANUAL

Heavy Duty Gear Head Gap Bed Engine Lathes

MACHINERYHOUSE



WARNING

- Read and understand the entire instruction manual before operating machine
- This manual is intended to familiarize you with the technical aspects of this lathe.It is not,nor was it intended to be,a training manual.
- This machine is designed and intended for use by properly trained and experienced personnel only.If you are not familiar with the proper safe use of lathe,do not use this machine until proper training and knowledge has been obtained.
- Always wear approved safety glasses/ face shields while using this machine.
- Make certain the machine is properly grounded.
- Before operating the machine,remove tie,rings, watches,other jewelry,and roll up sleeves above the elbows. Remove all loose clothing and confine long hair.Do not wear gloves.
- Keep rhe floor around the machine clean and free or scrap material,oil and grease.
- Keep machine guards in place at all times when the machine is in use.If removed for maintenance purposes,use extreme caution and replace the guards immediately.
- Do not over reach.Maintain a balanced stance at all times so that you do not fall or lean against blades or other moving parts.
- Make all machine adjustments or maintenance with the machine unplugged from the power source.
- Use the right tool.Don't force a tool or attachment to do a job, which it was not designed for.
- Replace warning labe ls if they become obscured or removed.
- Make certain the motor switch is in the OFF position before connecting the machine to the power supply.
- Give your work undivided attention. Looking around,carrying on a conversation and "horse-play" are careless acts that can result in serious injury.
- Keep visitors a safe distance from the work area.
- Use recommended accessories,improper accessories may be hazardous.
- Make a habit of checking to see that keys and adjusting wrenches are removed before turning on the machine.
- Never attempt any operation or adjustment if the procedure is not understood.
- Keep fingers away from revolving parts and cutting tools whi le in operation.
- Keep belt guards in place and in working order.
- Never force the cutting action.
- Do not attempt to adjust remove tools during operation.
- Always keep cutters sharp.
- Always use identical replacement parts when servicing.
- Failure to comply with all of these warnings may cause serious injury.

MACHINERY HOUSE

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MACHINERY HOUSE

Application

The lathe is a heavy duty geared head gap bed engine lathe.It can perform various turning operation, as well as boring,drilling,grooving and other operations.It can also be used for turning metric and inch threads,diametral and modulus threads.It is used in repairing workshops and is suitable for metal manufacture in single piece,small, medium and large barch production.

Features:

- Large 3 1/8" spindle bore
- Heavy-duty D1-8 spindle is supported by double row cylindrical roller bearing and angular contact ball bearing
- Bedways are induction hardened and ground
- Removable gap bed for large diameter work
- One-piece cast iron base
- Headstock gears are hardened and ground
- Headstock is lubricated by means of pump and oil bath
- Easily cut screw
- Five-position auto carriage stop
- Spindle foot brake
- Automatic feeding and threading are fully inter locked

MACHINERY HOUSE

Specification

Note:If you buy metric lathe,please refer to specification (for metric lathe).

Specification (for inch lathe)

Model	1440	1660	1860	2080
Capacities:				
Swing Over Bed	14"	16"	18"	
Swing Over Cross Slide	7.25"	8.75"	11.2"	
Swing Over Gap	22.25"	25.63"	27.4"	
Length of Gap	12.6"	12.6"	12.6"	
Distance Between Centers	40"	60"	60"	
Headstock:				
Hole Through Spindle	3-1/8"	3-1/8"	3-1/8"	
Spindle Nose	D1-8	D1-8	D1-8	
Taper in spindle Nose	MT-6	MT-6	MT-6	
Spindle Taper Adapter	MT-4	MT-4	MT-4	
Spindle Bearing Type	double row cylindrical roller bearing angular contact ball bearing			
Number of Spindle Speeds	12	12	12	
Range of Spindle Speeds(RPM)	40-1600	40-1600	40-1600	
Gearbox:				
Number of Longitudinal Feeds	60	60	60	
Range of longitudinal Feeds(inch/rev.)	0.0012"-0.0672"	0.0012"-0.0672"	0.0012"-0.0672"	
Number of Cross Feeds	60	60	60	
Range of Cross Feeds(inch/rev.)	0.0005"-0.0288"	0.0005"-0.0288"	0.0005"-0.0288"	
Number of Inch Threads	60	60	60	
Range of Inch Threads(T.P.I)	2-112	2-112	2-112	
Number of Metric Threads	41	41	41	
Range of Metric Threads	0.1-14mm	0.1-14mm	0.1-14mm	
Leadscrew	1.41" x 4T.P.I	1.41" x 4T.P.I	1.41" x 4T.P.I	
Feed Rod Diameter	1-1/8"	1-1/8"	1-1/8"	

Specification(for inch lathe)

Model	1440	1660	1860	2080
Compound and Carriage:				
Toolpost Type	4-way	4-way	4-way	
Maximum Tool Size	1" x 1"	1" x 1"	1" x 1"	
Maximum Compound Slide Travel	4-3/4"	4-3/4"	4-3/4"	
Maximum Cross Slide Travel	9"	9"	9"	
Tai Istock:				
Tai Istock Spindle Travel	5"	5"	5"	
Diameter of Tai Istock Spindle	2-3/4"	2-3/4"	2-3/4"	
Taper in Tailstock Spindle	MT-5	MT-5	MT-5	
Miscel laneous:				
Steady Rest Capacity	4 1/2"	4 1/2"	4 1/2"	
Follow Rest Capacity	4"	4"	4"	
Length of Bed	79.7"	100"	100"	
Width of Bed	19.6"	19.6"	19.6"	
Height of Bed	16.4"	16.4"	16.4"	
Overall Dimensions(L x W x H)	100" x 45" x 47"	120" x 45" x 49"	120" x 45" x 51"	
Main Motor	3PH,230V/460V	3PH,230V/460V	3PH,230V/460V	
	60HZ 7-1/2HP	60HZ 7-1/2HP	60HZ 7-1/2HP	
Net Weight(approx.)	4850 lbs	5700 lbs	6900 lbs	

Specification(for metric lathe)

Model	1440	1660	1860	2080
Capacities:				
Swing Over Bed	360mm	400mm	460mm"	
Swing Over Cross Slide	184mm	222mm	285mm	
Swing Over Gap	565mm	651mm	696mm	
Length of Gap	320mm	320mm	320mm	
Distance Between Centers	1000mm	1500mm	1500mm	
Headstock:				
Hole Through Spindle	80mm	80mm	80mm	
Spindle Nose	D1-8	D1-8	D1-8	
Taper in spindle Nose	MT-6	MT-6	MT-6	
Spindle Taper Adapter	MT-5	MT-5	MT-5	
Spindle Bearing Type	double row cylindrical roller bearing angular contact ball bearing			
Number of Spindle Speeds	12	12	12	
Range of Spindle Speeds(RPM)	40-1600	40-1600	40-1600	
Gearbox:				
Number of Longitudinal Feeds	60	60	60	
Range of Longitudinal Feeds(mm/rev.)	0.030-1.66	0.030-1.66	0.030-1.66	
Number of Cross Feeds	60	60	60	
Range of Longitudinal Feeds(mm/rev.)	0.02-1.21	0.02-1.21	0.02-1.21	
Number of Metric Threads	41	41	41	
Range of Metric Threads	0.1-14mm	0.1-14mm	0.1-14mm	
Number of Inch Threads	60	60	60	
Range of Inch Threads(T.P.I)	2-112	2-112	2-112	
Leadscrew (mm)	36 x 6	36 x 6	36 x 6	
Feed Rod Diameter (mm)	28	28	28	

Specification(for metric lathe)

Model	1440	1660	1860	2080
Compound and Carriage:				
Toolpost Type	4-way	4-way	4-way	
Maximum Tool Size	25mm x 25mm	25mm x 25mm	25mm x 25mm	
Maximum Compound Slide Travel	120mm	120mm	120mm	
Maximum Cross Slide Travel	220mm	220mm	220mm	
Tailstock:				
Tai lstock Spindle Travel	130mm	130mm	130mm	
Diameter of Tailstock Spindle	70mm	70mm	70mm	
Taper in Tailstock Spindle	MT-5	MT-5	MT-5	
Miscel laneous:				
Steady Rest Capacity				
Follow Rest Capacity				
Length of Bed	2025mm	2545mm	2545mm	
Width of Bed	500mm	500mm	500mm	
Heigh of Bed	417mm	417mm	417mm	
Overall Dimensions(L x W x H)	2540x1143x1293mm	3048x1143x1244mm	3048x1143x1295mm	
Main Motor	3PH,380V	3PH,415V	3PH,415V	
	50HZ,5.5KW	50HZ,5.5KW	50HZ,5.5KW	
Net Weight(approx.)	2200kg	2600kg	3130kg	

Specification(for metric lathe)

Model	1440	1660	1860	2080
Compound and Carriage:				
Toolpost Type	4-way	4-way	4-way	
Maximum Tool Size	25mm x 25mm	25mm x 25mm	25mm x 25mm	
Maximum Compound Slide Travel	120mm	120mm	120mm	
Maximum Cross Slide Travel	220mm	220mm	220mm	
Tailstock:				
Tai lstock Spindle Travel	130mm	130mm	130mm	
Diameter of Tailstock Spindle	70mm	70mm	70mm	
Taper in Tailstock Spindle	MT-5	MT-5	MT-5	
Miscel laneous:				
Steady Rest Capacity				
Follow Rest Capacity				
Length of Bed	2025mm	2545mm	2545mm	
Width of Bed	500mm	500mm	500mm	
Heigh of Bed	417mm	417mm	417mm	
Overall Dimensions(L x W x H)	2540x1143x1293mm	3048x1143x1244mm	3048x1143x1295mm	
Main Motor	3PH,380V	3PH,380V	3PH,380V	
	50HZ,5.5KW	50HZ,5.5KW	50HZ,5.5KW	
Net Weight(approx.)	2200kg	2600kg	3130kg	

Uncrating and Clean-UP

1. Finish removing the wooden crate from around the lathe.
2. Unbolt the lathe from the shipping crate bottom.
3. Choose a location for the lathe that is dry, has good lighting, and has enough room to be able to service the lathe on all four sides.
4. Sling lathe with adequate lifting equipment as diagrammed in Fig.1, (Do not lift by spindle.) Slowly raise the lathe off the shipping crate bottom. Make sure lathe is balanced before moving.
5. To avoid twisting the bed, the lathe's location must be absolutely flat and level.Check for a level condition using a machinist's precision level on the bedways both front to back and side to side. The leveling pads will help you to reach a level condition. The lathe must be level to be accurate.
6. Clean all rust potected surfaces using a mild commercial solvent, kerosene or diesel fuel. Do not usepaint thinner,gasoline, or alcquer thinner.These will damage painted surfaces. Cover all cleaned surfaces with a light film of machine oil NO.30.
7. Remove the end gear cover .Clean all components of the end gear assembly and lubricate all gears with calcium grease NO.2. Replace cover.

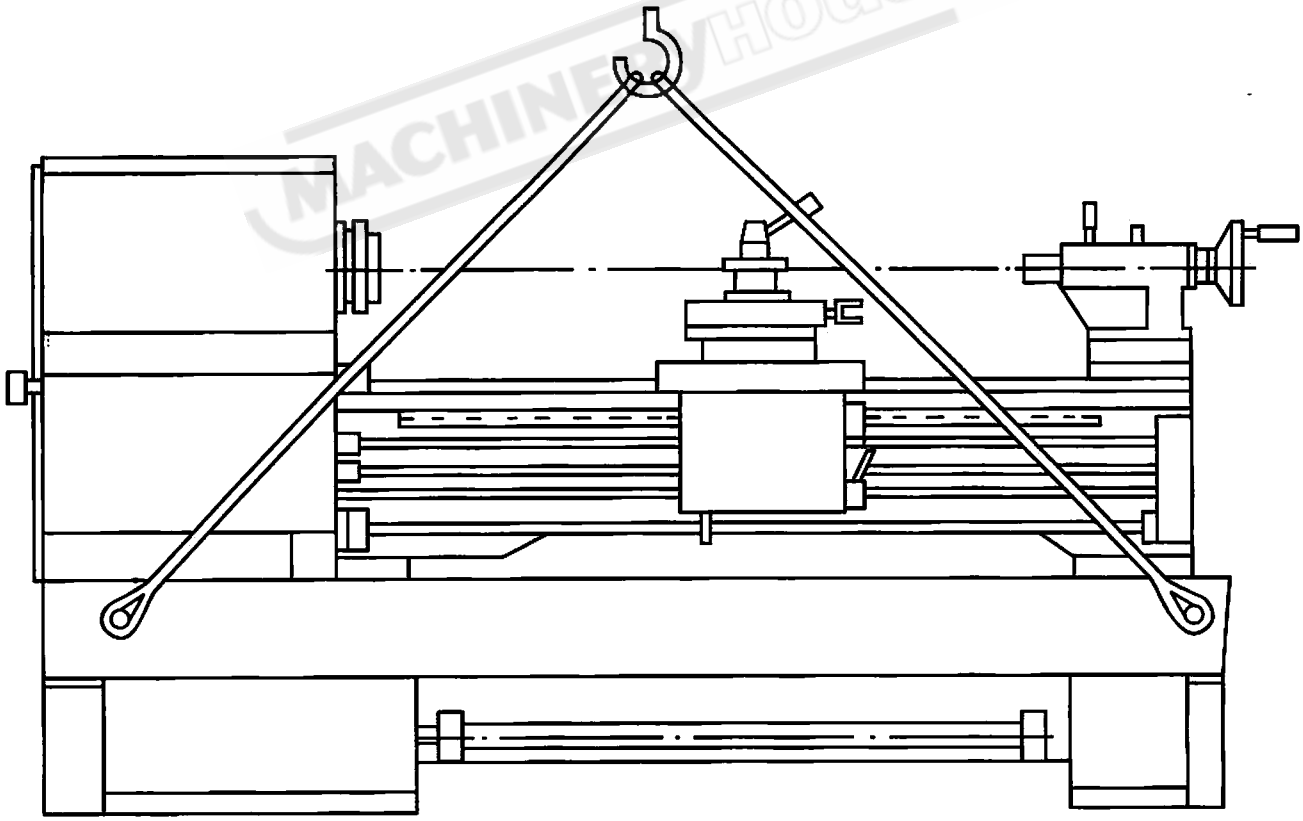


Fig.1

Chuck preparation (Three jaw)

WARNING

Read and understand all directions for chuck preparation!

Failure to comply may cause serious injury or damage to the lathe!

1. Support the chuck while turning three camlocks 1/4 turn counter-clockwise with the cam lock key enclosed in the tool box.
2. Carefully remove the chuck from the spindle and place on an adequate work surface.
3. Inspect the camlock studs.Make sure they have not become cracked or broken during transit. Clean all parts thoroughly with solvent . Also clean the spindle and camlocks.
4. Cover all chuck jaws and scroll inside the chuck with #2 lithium tube grease. Cover the spindle, cam locks, and chuck body with a light film of 20W oil.
5. Lift the chuck up to the spindle nose and press onto the spindle.Tighten in place by turning the cam locks 1/4 turn clockwise. the index mark on the camlock should be between the two indictor arrows. If the index mark is not between the two arrows,remove the chuck and adjust the camlock studs by either turning out one full turn (if cams will not engage) or turning in one full turn (if cams turn beyond indicator marks).
6. Install chuck and tighten in place.

Lubrication

CAUTION

Lathe must be serviced at all lubrication Points and all reservoirs filled to operating level before the lathe is placed into service!Failure to comply may cause serious damage to the lathe!

1. **Headstock**–Headstock is lubricated by means of pump and oil bath,oil must be up to indicator mark in oil sight glass(1,Fig.2). Top off with machine oil NO.30 or equivalent. Fill by opening the cover (2,Fig.2). To drain, open the change gear cover door and remove the hex nut (3,Fig,.2). Drain oil completely,wash the headstock with kerosene, refill after the first 10 days of operation,then change oil in the headstock every 50 days .
2. **Change gear**–open change gear cover door and lubricate the change gear with calcium grease NO.2 once per week,lubricate oiler on the shaft with machine oil NO.30 once per shift.
3. **Gear box**–oil must be up to indicator mark in oil sight glass (4,Fig.2). Top off with ma-chine NO.30 or equivalent. Fill by removing the top cover . (4,Fig.2). To drain ,open the change gear cover door and remove drain plug (6,Fig.2). Drain oil completely and refill after the first 10 days of operation. Then change oil in the gearbox every 50 days.
4. **Apron**–oil must be up to indicator mark in oil sight glass (7,Fig.2). Top off with machine oil NO .30 or equivalent.Remove. oil plug(8,Fig.2).In left of apron to fill .To drain,remove drain plug on bottom of apron.Drain oil completely and refill after the first 10 days of operation. Then change oil in the apron every 50 days.
5. **Cross slide**–Lubricate four oil ports (9,Fig.2). With machine oil NO.30 once per shift .
6. **Compound rest**–Lubricate two oil ports (10,Fig.2). With machine oil NO.30 once per shift.
7. **Carriage**–Lubricate three oil ports (11,Fig.2). With machine oil NO.30 once per shift.
8. **Leadscrew**(Feed rod)– Lubricate leadscrew(feed rod) with machine oil NO.30 by oil gun in the tool box once per shift.
9. **Tailstock**–Lubricate three ports (12,Fig.2) with machine oil NO.30 onec per shift.

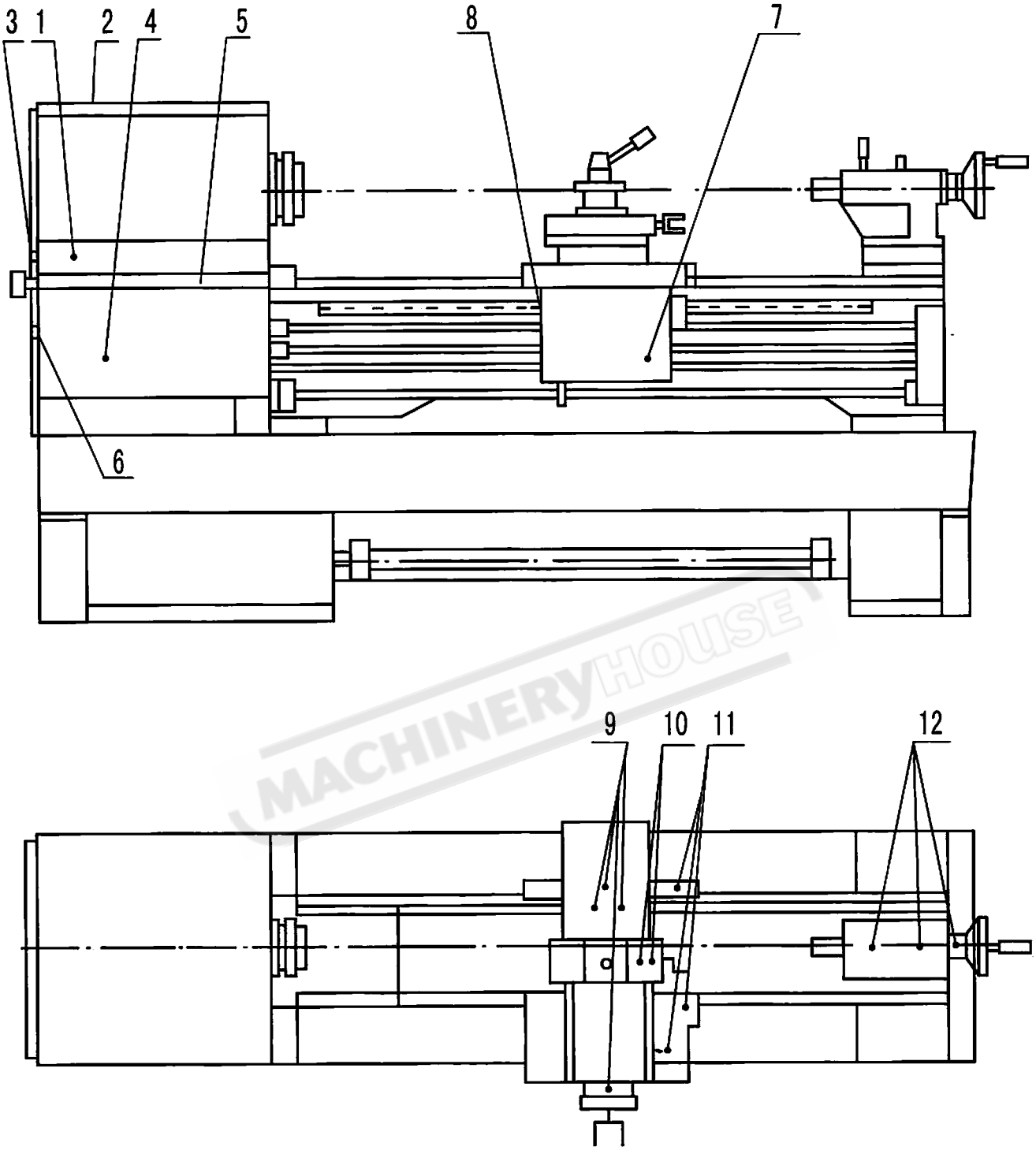


Fig.2

MACHINERYHOUSE

Coolant Preparation

1. Remove cover in the right end of cast iron base.
2. Pull out the coolant tank and pour coolant mix into the coolant tank.
3. After machine has been connected to power,turn on coolant pump and check to see coolant is cycling properly.
4. Fasten cover to the right end cast iron base.

Electrial Connections

WARNING

All eLectrical connections must be comp leted by a qualified electrician!
Failure to comply may cause serious injury and damage to the machinery and property!

The heavy duty gear head lathe is rated at 7-1/2HP , 3ph,230v/460/v, 60HZ or 5.5kw,3ph,380v, 50hz power,make sure the lathe is proper ly grounded.

General Description

Lathe Bed

The lathe bed (1,Fig.3) is made of high grade cast iron. By combining high cheeks with strong ribs, a bed with low vibration and high rigidity is realized. Two precision ground vee slideways ,reinforced by heat hardening and grinding, are an accurate guide for the carriage and headstock .The main drive motor is mounted in the cast iron base below headstock.

One-piece Cast Iron Base

The base(2,Fig.3) is cast from high grade,low vibration cast iron. The left base and the right base are cast in one singl piece.

Headstock

The headstock(3,Fig.3) is cast from high grade,low vibration cast iron .It is bolted to the bed by four screws with two adjusting screws for alignment. In the head, the spindle is mounted on a precision double row cylindrical roller bearing and a precision angular contact ball bearing .the hollow spindle has Morse Taper #6 with a 3-1/8" bore.

Carriage

The Carriage(4,Fig.3) is made from high quality cast iron The sliding parts are smooth ground.The cross-slide is mounted on the carriage and moves on a dove tailed silde which can by adjusted for play by means of the gibs. The top slide(5,Fig.3) which is mounted on the cross slide(6,Fig.3),can be rotated through 360`° ,the top slide and the cross slide travel in a dovetail slide and have adjustable gibs.A four way tool post is fitted on the top slide.

Four Way Tool Post

The four way tool post (7,Fig.3) is mounted on the top slide and allows a maximum of four tools to be mounted simultaneously. Remember to use a minimum of two clamping screws when installing a cutting tool.

Apron

The apron(8,Fig.3) is mounted to the carriage .In the apron a half nut and a steel ball over load clutch are fitted. In case of over load ,theclutchjumps away automati cally.The half nut gibs can be adjusted from the outside.The half nut is engaged by use of a lever. Quick travel of the apron is accomplised by means of a bed mounted rack and pinion,operated by a hand wheel on the front of the apron.

Tailstock

The tailstock(9,Fig.3) slides on a v-way and can be locked at any location by a clamping lever. The tailstock has a heavy duty spindle with a Morse Taper #4.

Leadscrew and Feed Rod

The leadscrew (10,Fig.3) and feed rod (11,Fig.3) are mounted on the front of the machine bed. They are connected to the gearbox at the left for automatic feed and lead and are suported by bushings on the left end and bracket on the right end. Both are equipped with shear pins.

Longitudinal touch-stop device

The longitudinal touch-stop device(12,Fig.3) is mounted on the front of the machine bed, It is connected to the gear box at the left end and has five position for auto carriage stop.

Gear box

The gear box(13,Fig.3) is made from high quality cast iron and is mounted to the left side of the machine bed.

Steady Rest

The steady rest serves as a support for shafts on the free tailstock end.The steady rest is mounted on the bedway and secured from below with a bolt,nut and locking plate.The sliding fingers require continuous lubrication at the contact points with the workpieco to prevent premature wear.

To set the steady rest:

1. Loosen three hex socket cap screws.
2. Loosen knurled screw and open sliding fingers until the steady rest can be moved with its fingers around the workpiece. Secure the steady rest in position.
3. Set the fingers snugly to the workpiece and secure by tightening three hex socket cap screws.Fingers should be snug but not over ly tight.Lubricate sliding points with lead based grease.
4. After prolonged use,the fingers will show wear .Remill or file the tips of the fingers.

Follow Rest

The traveling follow rest is mounted on the saddle and follows the movement of the turning tool.Only two fingers are required as the place of the third is taken by the turning tool.The follow rest is used for turning operations on long,slender workpieces.It prevents flexing of the workpiece from the pressure of the cutting tool The sliding fingers are set similar to the steady rest,free of play,but not binding.Always lubricate adequately with lead based grease during operation.

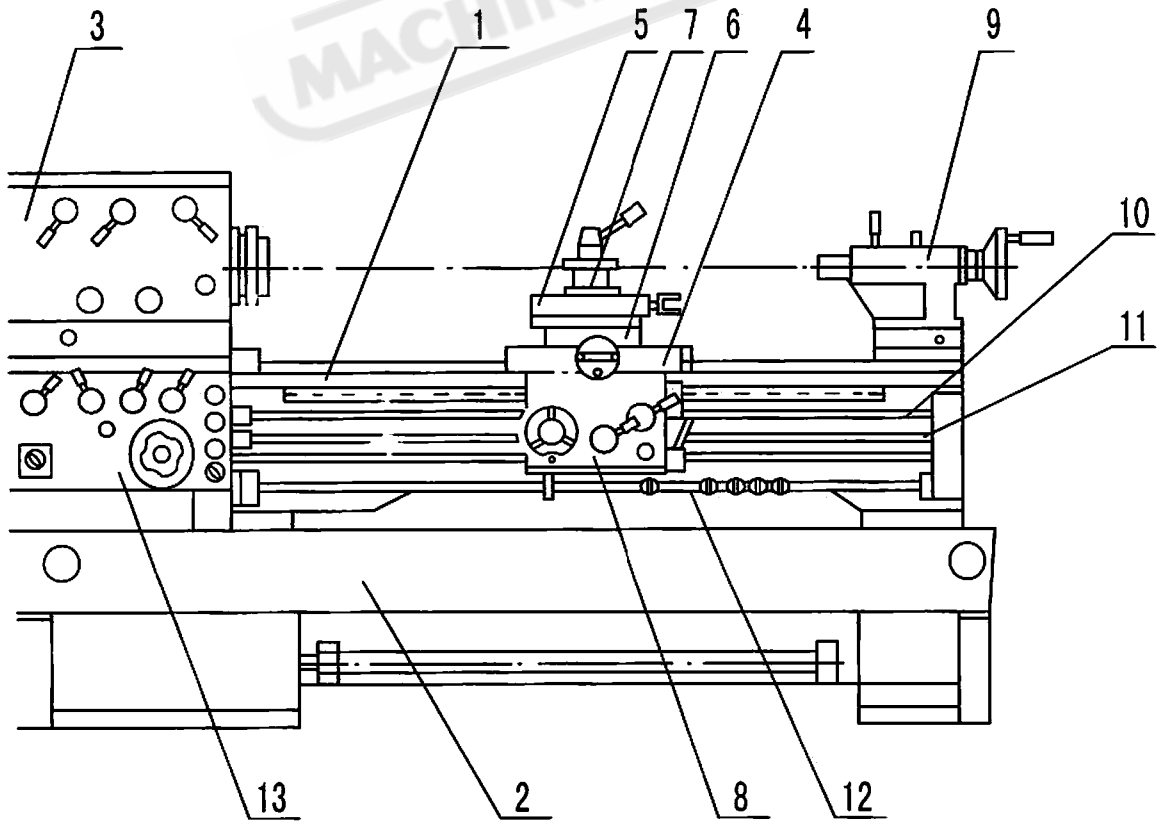


Fig.3

Controls

1. **Headstock Geat Change Levers** (1,Fig.4)-Located on the front of the headstock at the top. Move levers according to the chart to desired spindle speed.
2. **Leadscrew/Feedrod Directional knob** (2,Fig.4)-Located on the front of the headstock. Turning the knob causes carriage travel toward the headstock or the tailstock. Do not turn the knob while machine is running.
3. **Feed/Lead Selector lever** (3,Fig.4)-located on the front of the headstock,Used whenever setting up for threading or feeding.
4. **Coolant on-off Switch** (4,Fig.4)-located on the front of the gear box.Turns coolant pump on and off.
5. **Eergency Stop Switch** (5,Fig.4)-located on the front of the gear box,Depress to stop all machine functions.
6. **Jog Swich** (6,Fig.4)-Depress and release to advance spindle momentarily.
7. **Power Indicator Light** (7,Fig.4)-Lit whenever lathe has power.
8. **Feed/lead Rate Selector Hand Wheel** (8,Fig.4)-Located on the front of the gear box Used in setting up for feeding and threading.
9. **Feed/Lead Rate Selector lever** (9,Fig.4)-located on the front of the gear box. Used in setting up for feeding and threading.
10. **Change Gear Lever** (10,Fig.4)-located on the front of the gear box.Used in setting uo for feeding and threading,Moving the change gear lever to cut all kinds of inch(metric)and DP(MP) threads in the feed and thread tables with no change gears to replace.It's more easier to cut thread.
11. **Power Swith** (11.Fig,4)-Located on the front of the gear box.Turns main power to lathe on and off.
12. **Longitudial Touch-Stop Hand wheel** (12,Fig.4)-Located on the right side of the gear box. Turning the hand wheel to change the position of auto carriage stop.
13. **Auto feed on-off Lever** (13,Fig.4)-located on the front of the apron.Move the lever up,auto feed is on.Move the lever down,auto feed is off.
14. **Feed selector and Half Nut Engage Lever** (14,Fig.4)-Located on front of the apron assembly. Move the lever down to engage,thread can be cut,(Note:The auto feed on-off lever must be moved down).Move the lever up to active the crossfeed and the longitudinal functions.(Note:The auto feed on-off lever must be moved up.)
15. **Longitudinal Traverse Hand Wheel** (15,Fig.4)-Located on the apron assembly. Rotate hand wheel clockwise to move the apron assembly toward the tailstock(right).Rotate the wheel counter-clcockwise to move the apron assembly toward the headstock(left).
16. **Spindle Forward/Reverse Selector Lever** (16,Fig.4)-Move the lever down or up to change the spindle rotaion derection.

17. **Crose Traverse Hand wheel** (17,Fig.4)-Located above the apron assembly.Clockwise rotation moves the cross slide toward the rear of the machine.
18. **Compound Rest Traverse Handwheel** (18,Fig.4)-Located on the end of the compound silde. Rotate clockwise or counter-clockwise to move the position.
19. **Tool Post Clamping Lever** (19,Fig.4)-located on the top to the tool post. Rotate counter - Clockwise to loosen and clockwise to tighten.
20. **Tailstock Quill Clamping Lever** (20,Fig.4)-Located on the tailstock . Lift up to lock the spindle. Push down lever to unlock.
21. **Tailstock Clamping Lever** (21,Fig.4)-located on the tailstock,Lift up lever to lock.Push down lever to unlock.
22. **Tailstock Quill Traverse Handwheel** (22,Fig.4)-Located on the tailstock.Rotate clockwise to advance the quill.Rotate coumter-clockwise to retract the quill.
23. **Tailstock off-set Adjustment** (23,Fig.4)-a hex socket cap screw located on the tailstock base is used to off-set the tailstock for cutting tapers.
24. **Foot Brake** (24,Fig.4)-Located on the one piece cast iron base.Depress to stop all lathe functions.

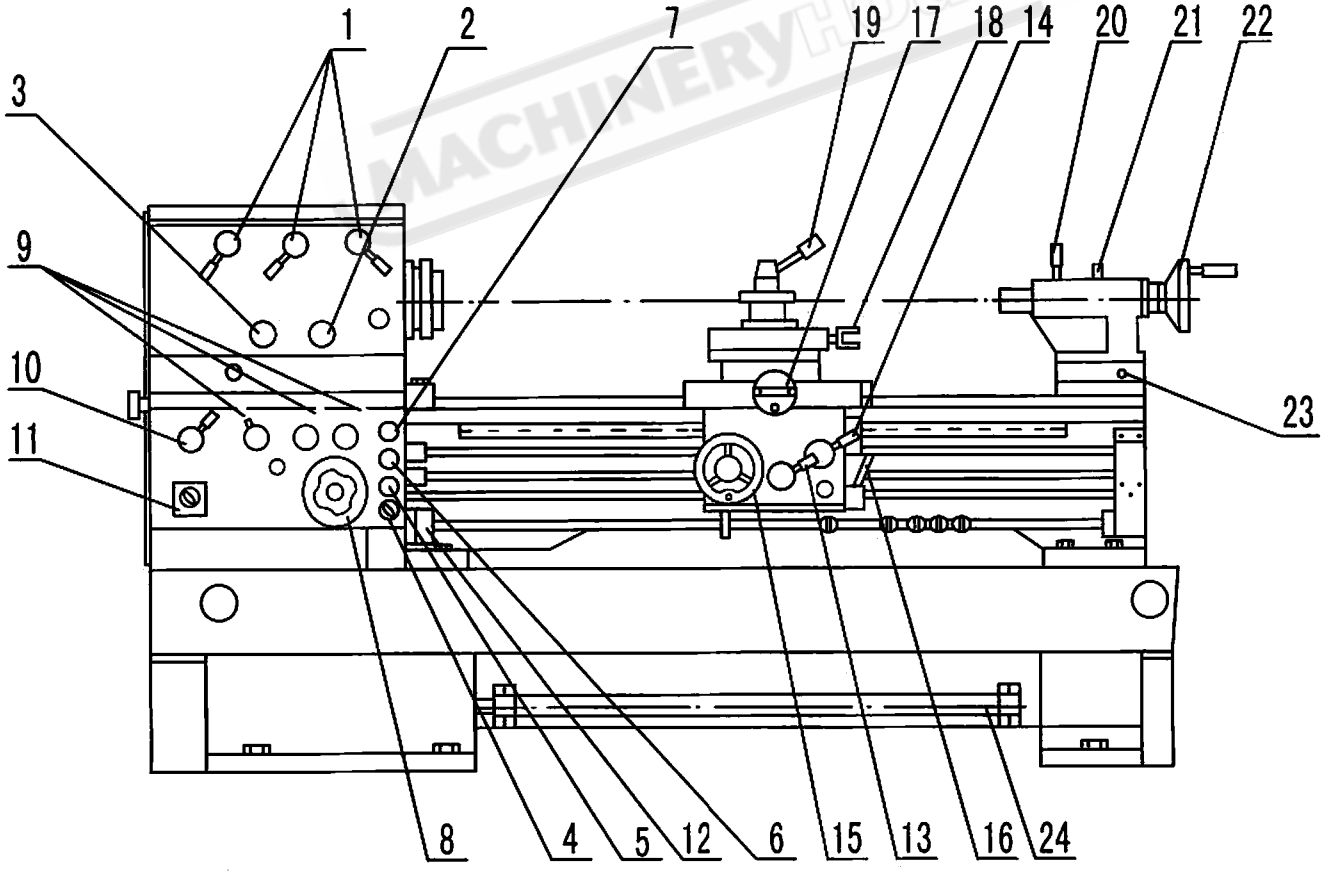


Fig.4

Break-In procedure

During manufacture and testing.This lathe has been operated in the low R.P.W,range for three hours . To allow time for the gears and bearings to break-in and run smoothly.

Operation

Feed and Thread Selection

1. Reference the feed and thread tables found on the top cover of the gear box.
2. Move levers to the appropriate positions according to the chart.

Automatic Feed Operation and Feed Changes

1. Move the forward/reverse selector lever up or down depending desired direction.
2. Move the auto feed on-off lever up.
3. Set selector levers to desired rate.Refer to chart 3.
4. Move the feed selector and half nut engage lever up to proper positon.

Thread Cutting

1. Set forward/reverse lever up or down depending on the desired directlon.
2. Move the auto feed on-off lever down.
3. Set selector levers to desired rate.
4. Engage the half nut lever To cut inch threads,refer to the chart 1.
   The half nut lever and the threading dial are used to thread in the convetional manner .The thread dial chart specifies at which point a thread can be entered using the threading dial.
5. To cut metric thread,the half nuts must be left continually engaged once the start point has been selected and the half nut is initially engaged.(thread dial can not be used).
6. To cut DP or MP thread,refer to the chart 2.

Note: IF you buy metric lathe,please refer to the metric lathe chart (4,5,6)

G															
LNCH THREAD TARLE							METRIC THRRAD TABLE								
 T / I″							 m m								
LEVER	Ⅱ JPR	Ⅱ JQR	Ⅱ KQR	I JPR	I JQR	I KQR	Ⅱ MQS	Ⅱ MPS	Ⅱ MNS	Ⅱ MPU	I MQS	Ⅱ MNU	I MQU	I MPU	I MNU
1	64	32	16	8	4	2	0.1	0.2	0.4		0.8	1	2	4	8
2	72	36	18	9	4 1/2	2 1/4			0.45		0.9		2.25	4.5	9
3	76	38	19	9 1/2	4 3/4	2 3/8									
4	80	40	20	10	5	2 1/2		0.25	0.5			1.25	2.5	5	10
5	88	44	22	11	5 1/2	2 3/4			0.55				2.75	5.5	11
6	92	46	23	11 1/2	5 3/4	2 7/8									
7	96	48	24	12	6	3	0.15	0.3	0.6	0.75		1.5	3	6	12
8	104	52	26	13	6 1/2	3 1/4			0.65				3.25	6.5	13
9	108	54	27	13 1/2	6 3/4	3 3/8									
10	112	56	28	14	7	3 1/2		0.35	0.7			1.75	3.5	7	14

Chart 1 (for inch lathe)

F													
DP THREAD TABLE						MP THREAD TABLE							
 D P						 M P							
LEVER	Ⅱ JQR	Ⅱ KPR	Ⅱ JPR	Ⅱ JQR	I KQR	Ⅱ MPS	Ⅱ MNS	I MQS	Ⅱ MNU	I MPS	I MQU	I MPU	I MNU
1	64	32	16	8	4	0.1	0.2	0.4		0.8	1	2	4
2	72	36	18	9	4 1/2			0.45		0.9		2.25	4.5
3	76	38	19	9 1/2	4 3/4								
4	80	40	20	10	5		0.25	0.5			1.25	2.5	5
5	88	44	22	11	5 1/2			0.55				2.75	5.5
6	92	46	23	11 1/2	5 3/4								
7	96	48	24	12	6	0.15	0.3	0.6	0.75		1.5	3	6
8	104	52	26	13	6 1/2			0.65				3.25	6.5
9	108	54	27	13 1/2	6 3/4								
10	112	56	28	14	7		0.35	0.7			1.75	3.5	7

Chart 2 (for inch lathe)

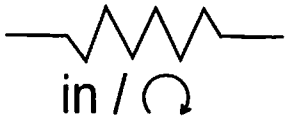
G												
FEED TABLE												
 in / ↻							 in / ↻					
LEVER	Ⅱ MQT	Ⅱ MPT	Ⅱ MNT	Ⅰ MQT	Ⅰ MPT	Ⅰ MNT	Ⅱ MQT	Ⅱ MPT	Ⅱ MNT	Ⅰ MQT	Ⅰ MPT	Ⅰ MNT
1	0.00120	0.00240	0.00480	0.00960	0.01920	0.03340	0.00050	0.00100	0.00200	0.00400	0.00800	0.01600
2	0.00130	0.00260	0.00520	0.01040	0.02080	0.04160	0.00056	0.00112	0.00224	0.00448	0.00896	0.01792
3	0.00140	0.00280	0.00560	0.01120	0.02240	0.04480	0.00060	0.00120	0.00240	0.00480	0.00960	0.01920
4	0.00150	0.00300	0.00600	0.01200	0.02400	0.04800	0.00063	0.00126	0.00252	0.00504	0.01008	0.02016
5	0.00165	0.00330	0.00660	0.01320	0.02640	0.05280	0.00070	0.00140	0.00280	0.00560	0.01120	0.02240
6	0.00170	0.00340	0.00680	0.01360	0.02720	0.05440	0.00073	0.00146	0.00292	0.00584	0.01168	0.02336
7	0.00180	0.00360	0.00720	0.01440	0.02880	0.05760	0.00080	0.00160	0.00320	0.00640	0.01280	0.02560
8	0.00195	0.00390	0.00780	0.01560	0.03120	0.06240	0.00083	0.00166	0.00332	0.00664	0.01328	0.02656
9	0.00200	0.00400	0.00800	0.01600	0.03200	0.06400	0.00086	0.00172	0.00344	0.00688	0.01376	0.02752
10	0.00210	0.00420	0.00840	0.01680	0.03360	0.06720	0.00090	0.00180	0.00360	0.00720	0.01440	0.02880

Chart 3 (for inch lathe)

F															
METRIC THRRAD TABLE										LNCH THREAD TARLE					
 m m										 T / I″					
LEVER	Ⅱ MQS	Ⅱ MPS	Ⅱ MNS	Ⅱ MPU	Ⅰ MQS	Ⅱ MNU	Ⅰ MQU	Ⅰ MPU	Ⅰ MNU	Ⅱ JPR	Ⅱ JQR	Ⅱ KQR	Ⅰ JPR	Ⅰ JQR	Ⅰ KQR
1	0.1	0.2	0.4		0.8	1	2	4	8	64	32	16	8	4	2
2			0.45		0.9		2.25	4.5	9	72	36	18	9	4 1/2	2 1/4
3										76	38	19	9 1/2	4 3/4	2 3/8
4		0.25	0.5			1.25	2.5	5	10	80	40	20	10	5	2 1/2
5			0.55				2.75	5.5	11	88	44	22	11	5 1/2	2 3/4
6										92	46	23	11 1/2	5 3/4	2 7/8
7	0.15	0.3	0.6	0.75		1.5	3	6	12	96	48	24	12	6	3
8			0.65				3.25	6.5	13	104	52	26	13	6 1/2	3 1/4
9										108	54	27	13 1/2	6 3/4	3 3/8
10		0.35	0.7			1.75	3.5	7	14	112	56	28	14	7	3 1/2

Chart 4 (for metric lathe)

G													
MP THREAD TABLE									DP THREAD TABLE				
 M P									 D P				
LEVER	Ⅱ MPS	Ⅱ MNS	Ⅰ MQS	Ⅱ MNU	Ⅰ MPS	Ⅰ MQU	Ⅰ MPU	Ⅰ MNU	Ⅱ JQR	Ⅱ KPR	Ⅱ JPR	Ⅱ JQR	Ⅰ KQR
1	0.1	0.2	0.4		0.8	1	2	4	64	32	16	8	4
2			0.45		0.9		2.25	4.5	72	36	18	9	4 1/2
3									76	38	19	9 1/2	4 3/4
4		0.25	0.5			1.25	2.5	5	80	40	20	10	5
5			0.55				2.75	5.5	88	44	22	11	5 1/2
6									92	46	23	11 1/2	5 3/4
7	0.15	0.3	0.6	0.75		1.5	3	6	96	48	24	12	6
8			0.65				3.25	6.5	104	52	26	13	6 1/2
9									108	54	27	13 1/2	6 3/4
10		0.35	0.7			1.75	3.5	7	112	56	28	14	7

Chart 5 (for metric lathe)

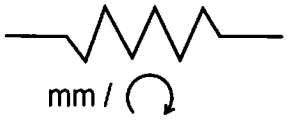
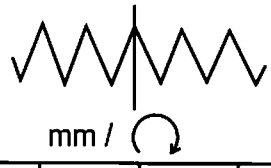
F												
FEED TABLE												
 mm /							 mm /					
LEVER	Ⅱ MQT	Ⅱ MPT	Ⅱ MNT	Ⅰ MQT	Ⅰ MPT	Ⅰ MNT	Ⅱ MQT	Ⅱ MPT	Ⅱ MNT	Ⅰ MQT	Ⅰ MPT	Ⅰ MNT
1	0.030	0.060	0.120	0.240	0.480	0.960	0.020	0.040	0.080	0.160	0.320	0.640
2	0.034	0.068	0.136	0.272	0.544	1.088	0.022	0.044	0.088	0.176	0.352	0.704
3	0.036	0.072	0.144	0.288	0.576	1.152	0.024	0.048	0.096	0.192	0.384	0.768
4	0.038	0.076	0.152	0.304	0.608	1.216	0.026	0.052	0.104	0.208	0.416	0.832
5	0.042	0.084	0.168	0.336	0.672	1.344	0.028	0.056	0.112	0.224	0.448	0.896
6	0.044	0.088	0.176	0.352	0.704	1.408	0.030	0.060	0.120	0.240	0.480	0.960
7	0.046	0.092	0.184	0.368	0.736	1.472	0.032	0.064	0.128	0.256	0.512	1.024
8	0.048	0.096	0.192	0.384	0.768	1.536	0.034	0.068	0.136	0.272	0.544	1.088
9	0.050	0.100	0.200	0.400	0.800	1.600	0.036	0.072	0.144	0.288	0.576	1.152
10	0.052	0.104	0.208	0.416	0.832	1.664	0.038	0.076	0.152	0.304	0.608	1.216

Chart 6 (for metric lathe)

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Compound Rest

The compound rest is located on top of the carriage and can be rotated 360 degrees. There is a calibrated dial (in degrees) bellow the rest to assist in placement of the compound to the desired angle.

Adjustments

After a period of time,wear in some of the moving components may need to be adjusted.

Spindle Bearing

Adjust the clearance of Spindle bearing as following:

1. Loosen the hex socket cap screw(A,Fig.5)
2. Adjust the nut(B,C,Fig.5) to proper position.
3. Tighten the hex socket cap screw (A,Fig.5)

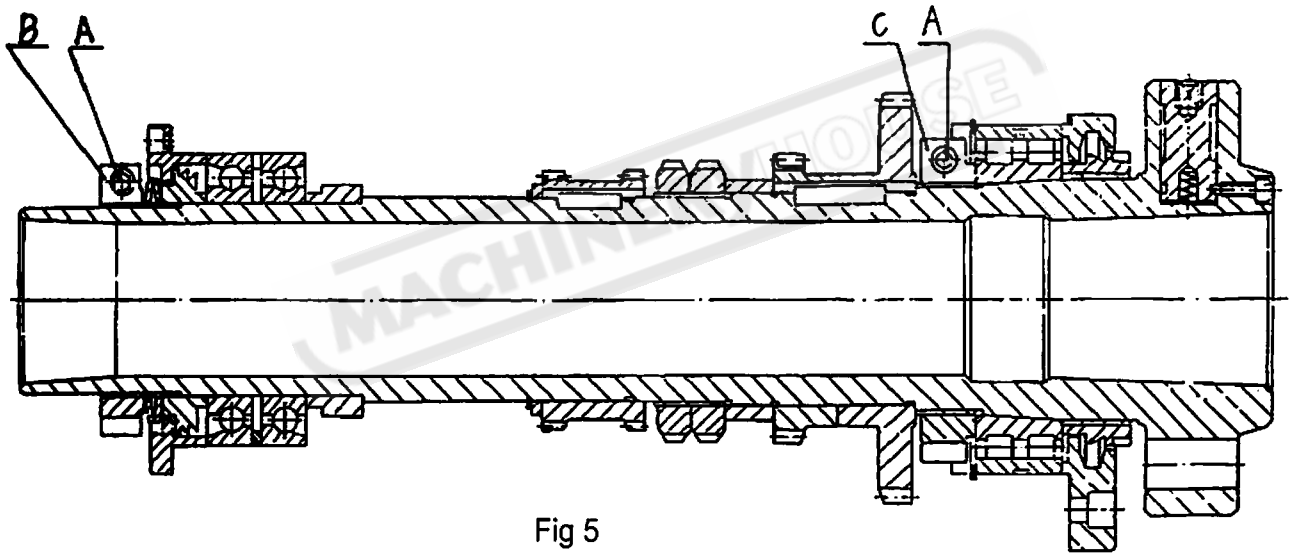

Fig 5

Cross Feed Nuts

Adjust the clearance of cross feed nuts on the saddle as following:

1. Loosen two hex socket screw(A,Fig.6)
2. Rotate the screw(B,Fig.6) down until the wedge(C,Fig.6) moves up,the clearance of cross feed nuts disappear.
3. Tighten the two hex socket screws(A,Fig.6)

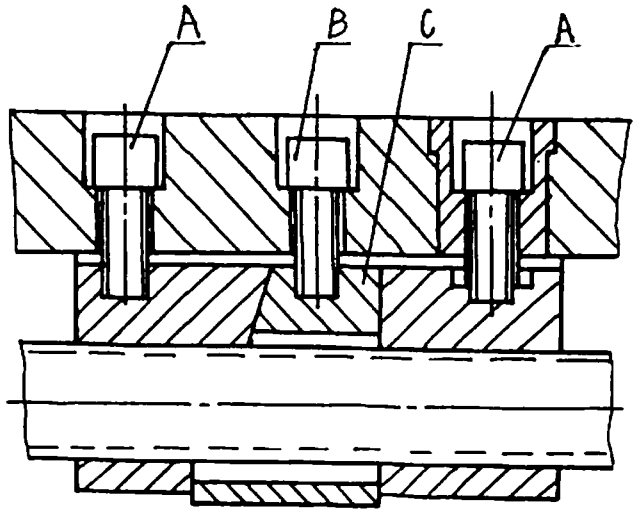

Fig 6

Overload clutch

A over load clutch is fitted in apron.In case of over load,the worm(5,Fig.7) stop rotating,but the gear (4,Fig.7) continue rotating.The over load clutch jumps away automatically and depress the spring (3,Fig.7).As a result ,the worm is disenaged from the wom gear and auto-feed is off.

Adjust as following:

1. Remove the end cover (1,Fig.7)
2. Properly adjust the nut(2,Fig.7).(Note:do not over tighten)
3. Tighten the end cover(1,Fig.7) again.

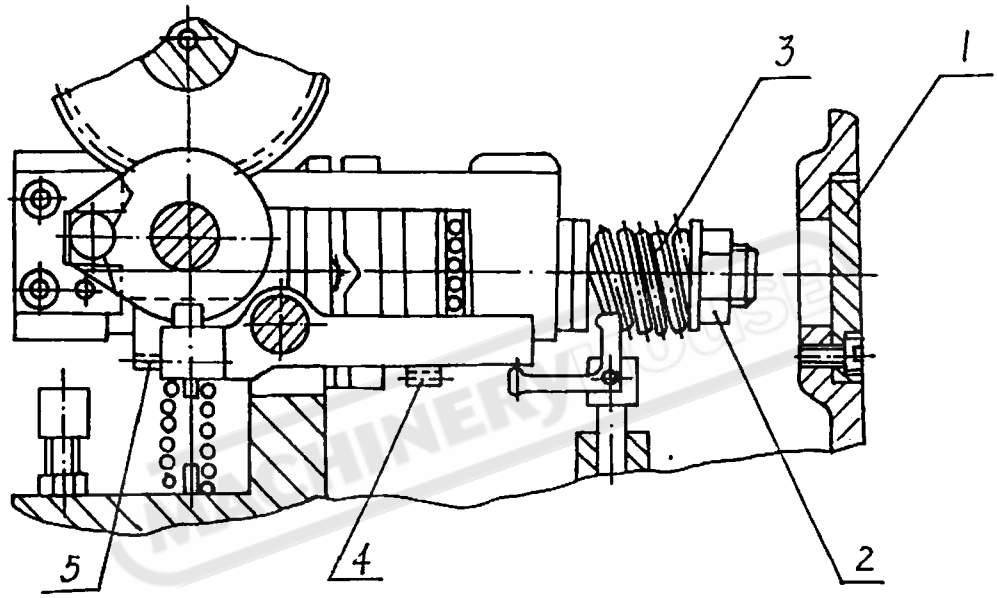

Fig: 7

Tailstock off-set

Follow the procedure bellow to offset the tailstock to cut shallow tapers:

1. Lock tailstock in position by raising clamping lever(1,Fig.8)
2. Alternately loosen and tighten front and rear setscrews(2,Fig.8)
3. Tighten both set screws(2,Fig.8)

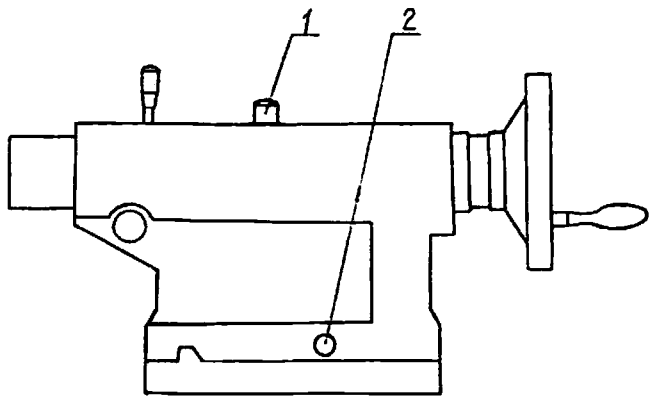

Fig: 8

Headstock Alignment

The headstock has been aligned at the factory and should not require adjustment.

However,if adjustment is deemed necessary,follow the procedure below to align the headstock.

1. Using a machinist's precision level on the bedways,make sure the lathe is not level,correct to a level condition before proceeding.Re -test alignment if any leveling adjustments were made.
2. From steel bar stock of approximately two inches in diameter,cut a piece approximately eight inches long.
3. Place two inches of bar stock into chuck and tighten chuck.Do not use the tailstock or center to support the other end.
4. Set up and cnd along five inches of the bar stock.
5. Using a micrometer,measure the bar stock next to the chuck at the end. The measurement should be the same.
6. If the measurements are not the same and adjustment is required,Loosen the screws that hold the headstock to the bed.Do not loosen completely,some drag should remain.
7. Adjust two screw nuts located on the endgear side of the headstock.Loosen one and tighten the other .Make another cut.Keep adjusting screw nuts after each cut until the bar stock measurements are the same .Tighten all headstock screws.

V Belt and Foot Brake

After a period of time.it's necessary to adjust the v belt and foot brake,follow the procedure bellow.

1. Disconnect machine from the power source.
2. Remove the end cover on the left side of the base.
3. Loosen the hex nut(1,Fig.9) and tighten the hex nut (2,Fig.9) until the tension is proper.
4. Install cover and connect lathe to the power source.

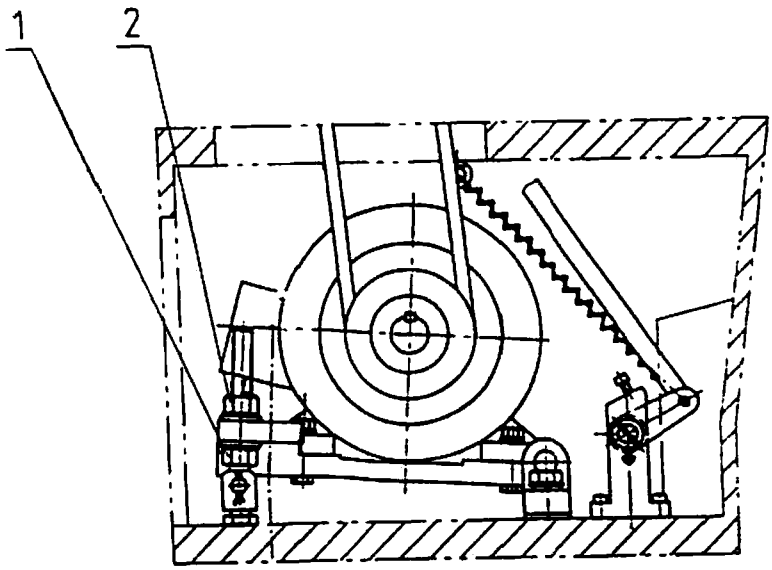

Fig: 9

PACKING LIST

Heavy Duty Gear Head Gap Bed Engine Lathes

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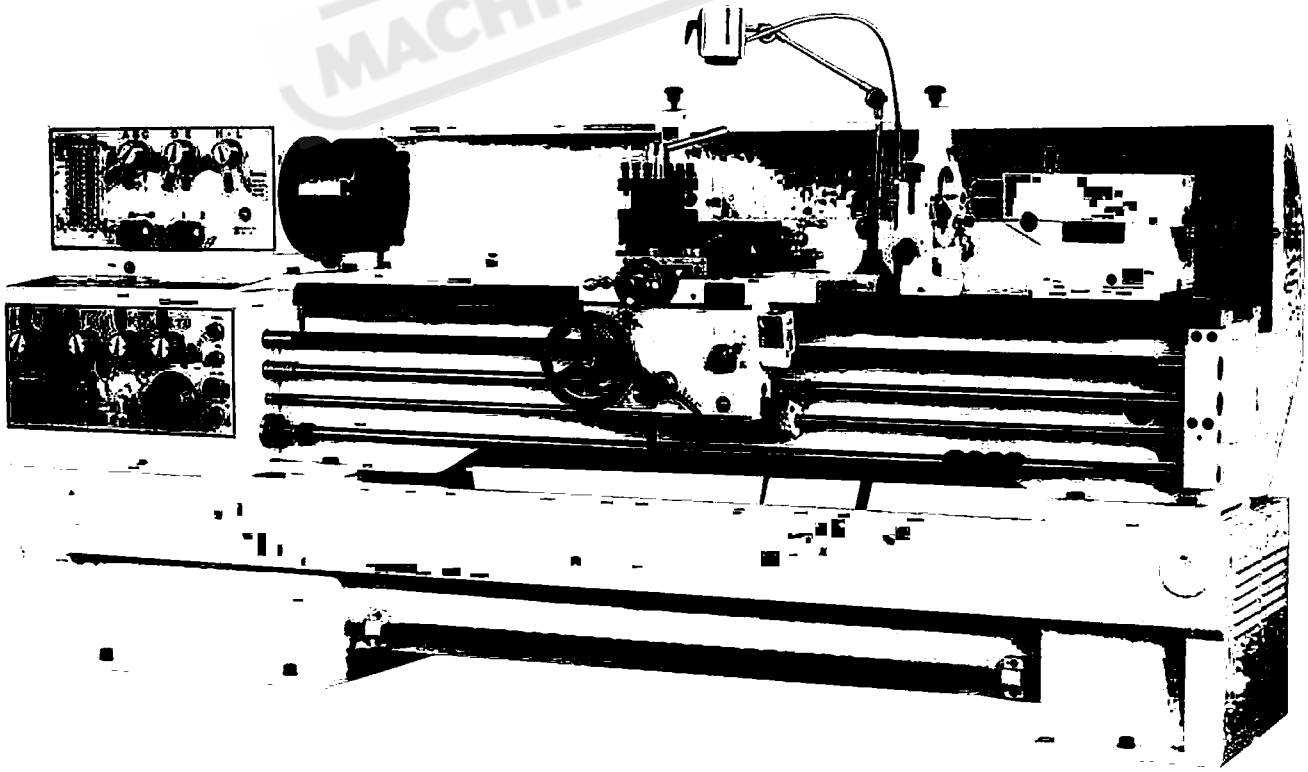

PACKING LIST

Lathe and main accessories

NO	Description	Spec	Qty	Notes
1	Lathe		1 sct	
2	3-jaw Chuck	10"	1 sct	Mounted on the lathe
3	Center	MT-4	1 pce	In the tool box
4	Center	MT-5	1 pce	In the tool box
5	Center Sleeve	MT-5(hole)	1 pce	In the tool box
6	Hand-push oil gun		1 pce	In the tool box
7	Screw driver with cross-way	6"	1 pce	In the tool box
8	Double-end wrench	27-30	1 pce	In the tool box
9	Double-end wrench	22-24	1 pce	In the tool box
10	Double-end wrench	17-19	1 pce	In the tool box
11	Inner-hexagon spanner	4.5.6.8.10.12	6 pce	In the tool box
12	Cam lock key		1 pce	In the tool box
13	Spanner for tool post		1 pce	In the tool box
14	Chuck key		1 pce	In the tool box
15	Flat screw driver	8"	1 pce	In the tool box
16	Taper pins		4 pce	In the tool box
17	Leveling pad		6 pce	In wooden box made in the works
18	Fuse cores	660V2A4A	6 pce	In the tool box
19	Tool box		1 pce	In wooden box made in the works
20	Operator's manual		1 pce	
21	Certificate of inspection		1 pce	
22	Packing list		1 pce	
23	4-jaw Chuck	12 3/8"	1 set	Original packing
24	Steady rest		1 set	Mounted on the lathe
25	Follow rest		1 set	Mounted on the lathe
26	Face plate	19 $\frac{1}{4}$ "	1 set	In wooden box made in the works

Packing inspector: _____

Date:

PARTS LIST

Heavy Duty Gear Head

Gap Bed Engine Lathes

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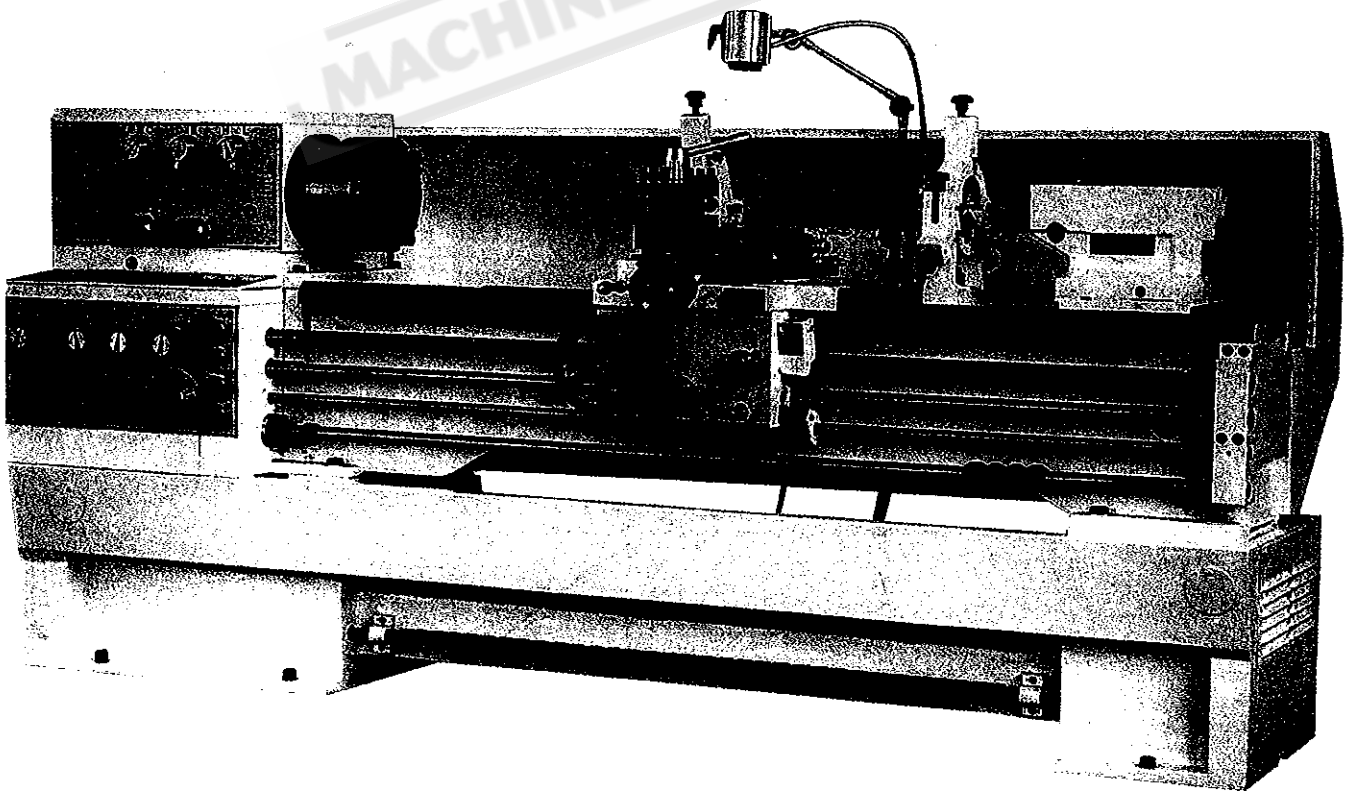
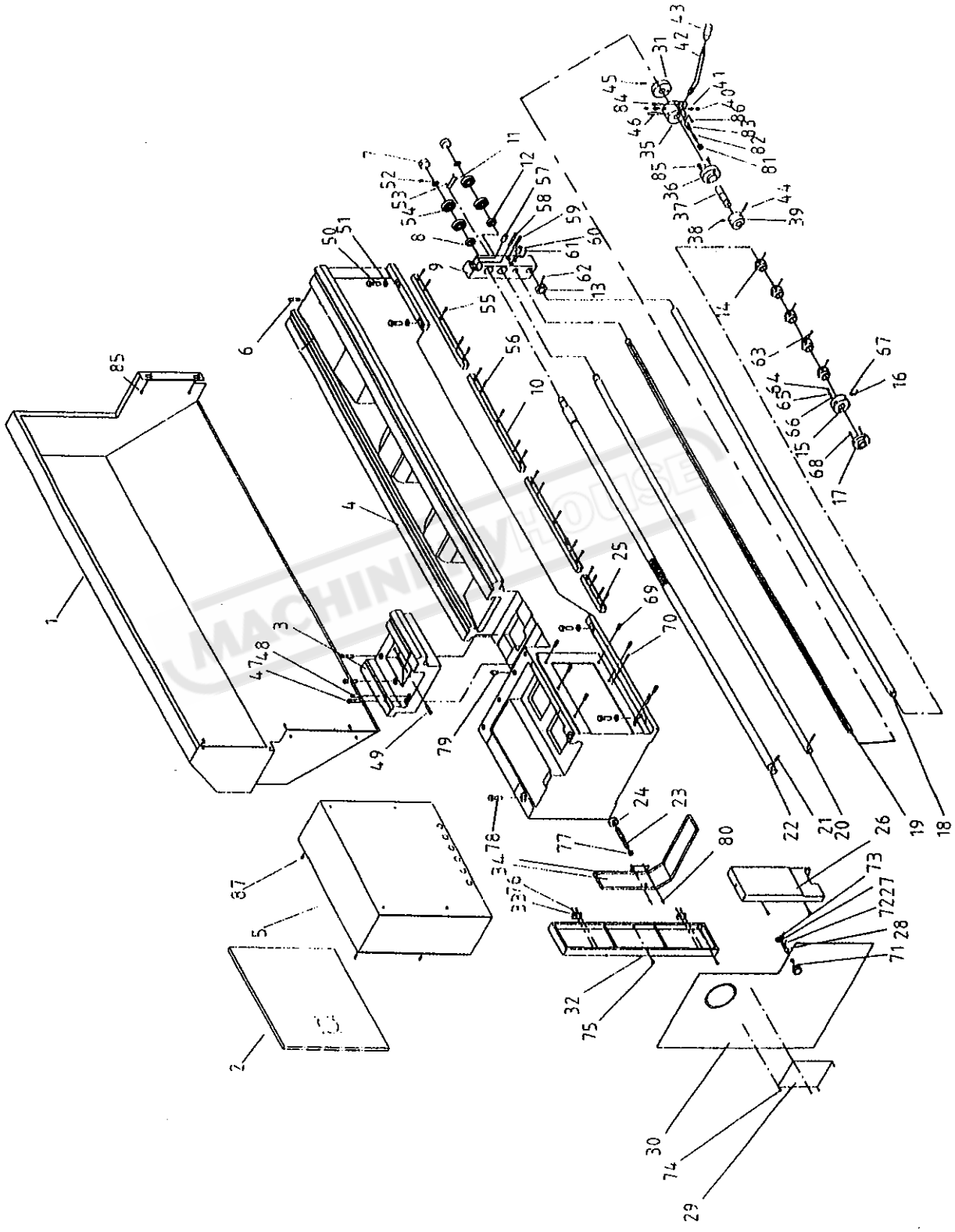


Bed Assembly



Bed Assembly

Index No.	Part No.	Description	Size	Qty.
1	C6240-10022	Baffle		1
2	C6136B-1201/1	Swich Box Cover		1
3	C6240-10009	Sadde		1
4	C6240-10012	Bed		1
5	C6136B-1201/2	Swich Box		1
6	GHB-1340-01112	Blot		1
7	C6240-10020	Plug		2
8	C6240-10018	Retainer Ring		1
9	C6240-10019	Cradle		1
10	C6240-10011	Rack		3
11	C6240-10021	Name Plate		1
12	C6240-10017	Retainer Ring		1
13	C6240-10030	Retainer Ring		1
14	C6240-10039	Eccentricity		1
15	C6240-10041	Knob Botton		5
16	GH-1340A-08-22	Name Plate		1
17	C6240-10042	Flange		1
18	C6240-10037	Pole		1
19	C6240-10015	Switch Pole		1
20	C6240-10014	Pole		1
21	C6240-10008	Taper Pin		2
22	C6240-10013	Screw Pole		1
23	C6240-10007	Screw		1
24	C6240-10044	Ring		1
25	C6240-10010	Rack		1
26	C6240-10006	Change Gear		1
27	C6240-10002	Cam Lock		1
28	C6240-10001	Shaft		1
29	C6240-10025	Lubrication Name Plate		1
30	C6240-10003	Change Gear Cover		1
31	C6136B-1032	Wheel Flange		1
32	C6240-10005	Change Gear		1
33	C6240-10004	Change Gear		2
34	C6240-10046	Change Gear Oil Baffle		1

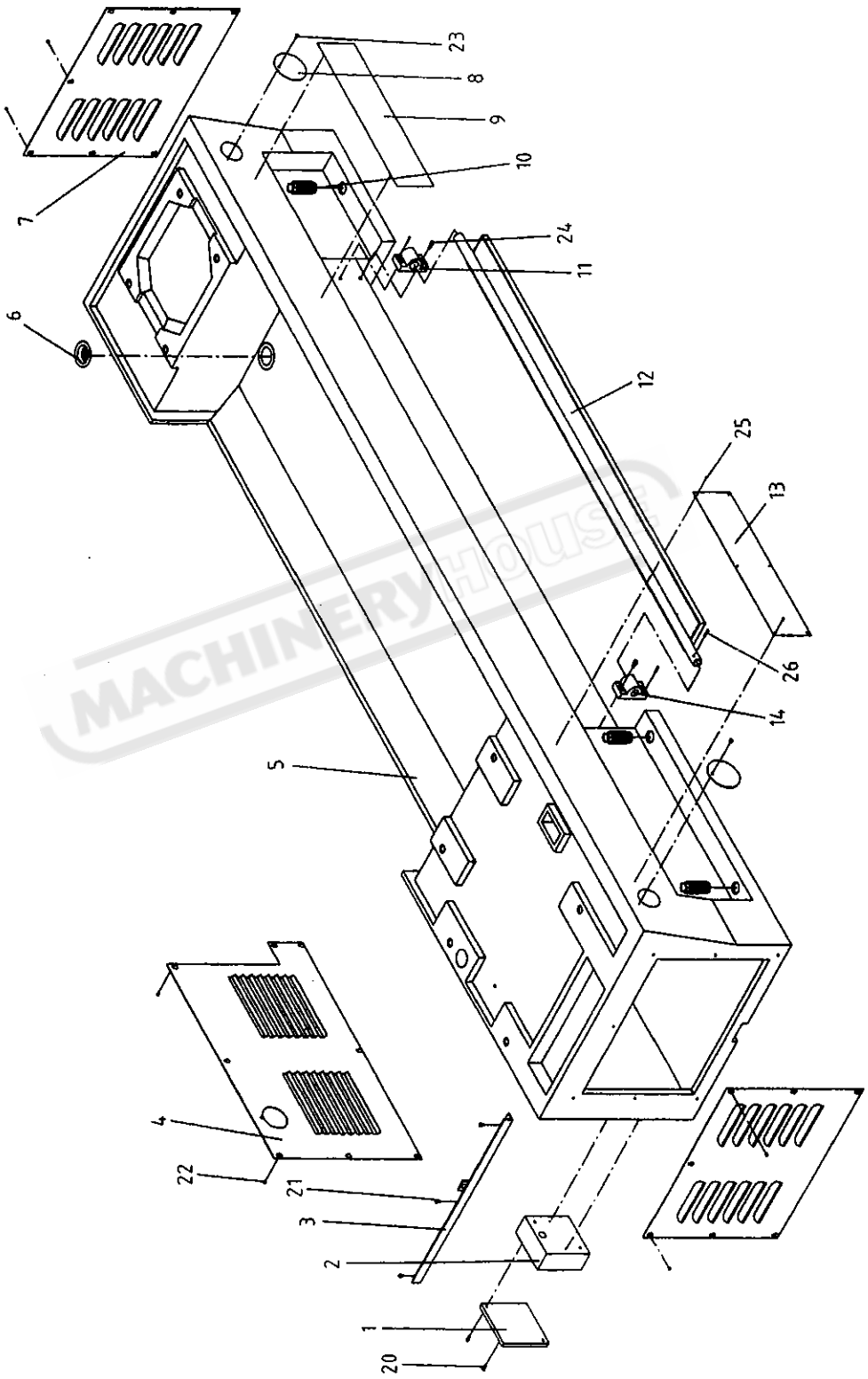
MACHINERY HOUSE

Index No.	Part No.	Description	Size	Qty.
35	C6136B-1030	Lever Base		1
36	C6136B-1034	Position Dish		1
37	C6240-10055	Switch Axle		1
38	GB73-85	Screw	M6x16	1
39	C6136B-1036B	Cam		1
40	GB73-85	Screw	M8x10	2
41	GB75-85	Screw	M8x16	2
42	C6136B-1028	Lever Rod	M6x16	1
43	GB4141.14	Knob	M10x50	2
44	GB68-79	Spring Pin	5x45	1
45	GB117-86	Pin	5x30	1
46	GB117-86	Pin	6x45	1
47	GB70-85	Hex Socker Cap Screw	M16x70	6
48	GB118-85	Pin	16x60	2
49	GB70-85	Hex Socket Cap Screw	M12x50	1
50	GB5780-86	Hex Head Screw	M20x55	9
51	GB97.1-85	Washer	20	14
52	GB894-86	Retainer Ring	25	2
53	GB818-85	Screw	M3x6	2
54	GB276-89	Bearing	61905	4
55	GB70-85	Hex Socket Cap Screw	M8x30	11
56	GB118-86	Inner Thread Pin	8x45	8
57	GB118-86	Inner Thread Pin	10x40	2
58	GB70-85	Hex Socket Cap Screw	M12x50	1
59	GB70-85	Hex Socket Cap Screw	M12x80	1
60	GB78-86	Screw	M20x25	1
61	GB78-85	Screw	M8x16	1
62	GB78-85	Screw	M8x8	1
63	GB80-85	Screw	M8x10	5
64	GB77-85	Screw	M10x10	1
65	GB2089-80	Spring	1x6x18	1
66	GB308-84	Steel Ball	ϕ8	1
67	GB818-85	Screw	M3x6	2
68	GB70-85	Hex Socket Cap Srew	M6x20	2
69	GB70-85	Hex Socket Cap Srew	M12x30	6
70	GB818-86	Taper Pin	10x24	2

Index No.	Part No.	Description	Size	Qty.
71	GB4141.29A-85	Knob	12x50	1
72	GB879-86	Spring Pin	4x24	1
73	GB879-86	Spring Pin	4x18	1
74	GB818-85	Screw	M3x6	4
75	GB70-85	Hex Socket Cap Screw	M8x20	4
76	GB70-85	Hex Socket Cap Screw	M5x120	4
77	GB6170-86	Hex Nut	M16	1
78	GB5780-86	Hex Head Screw	M20x55	5
79	GB120-86	Inner Thread Pin	20x40	1
80	GB70-85	Hex Socket Cap Screw	M6x10	2
81	C6136B-1041	Screw		2
82	GB2089-80	Spring	1.2x8x14	2
83	C6136B-1042	Clinder Plug		2
84	C6136B-1029	Key		2
85	GB70-85	Hex Socket Cop Screw	M8x16	5
86	GB119-86	Clinder Plug	B5x10	2
87	GB70-85	Hex Socket Cop Screw	M6x16	2

MACHINERY HOUSE

Stand Assembly

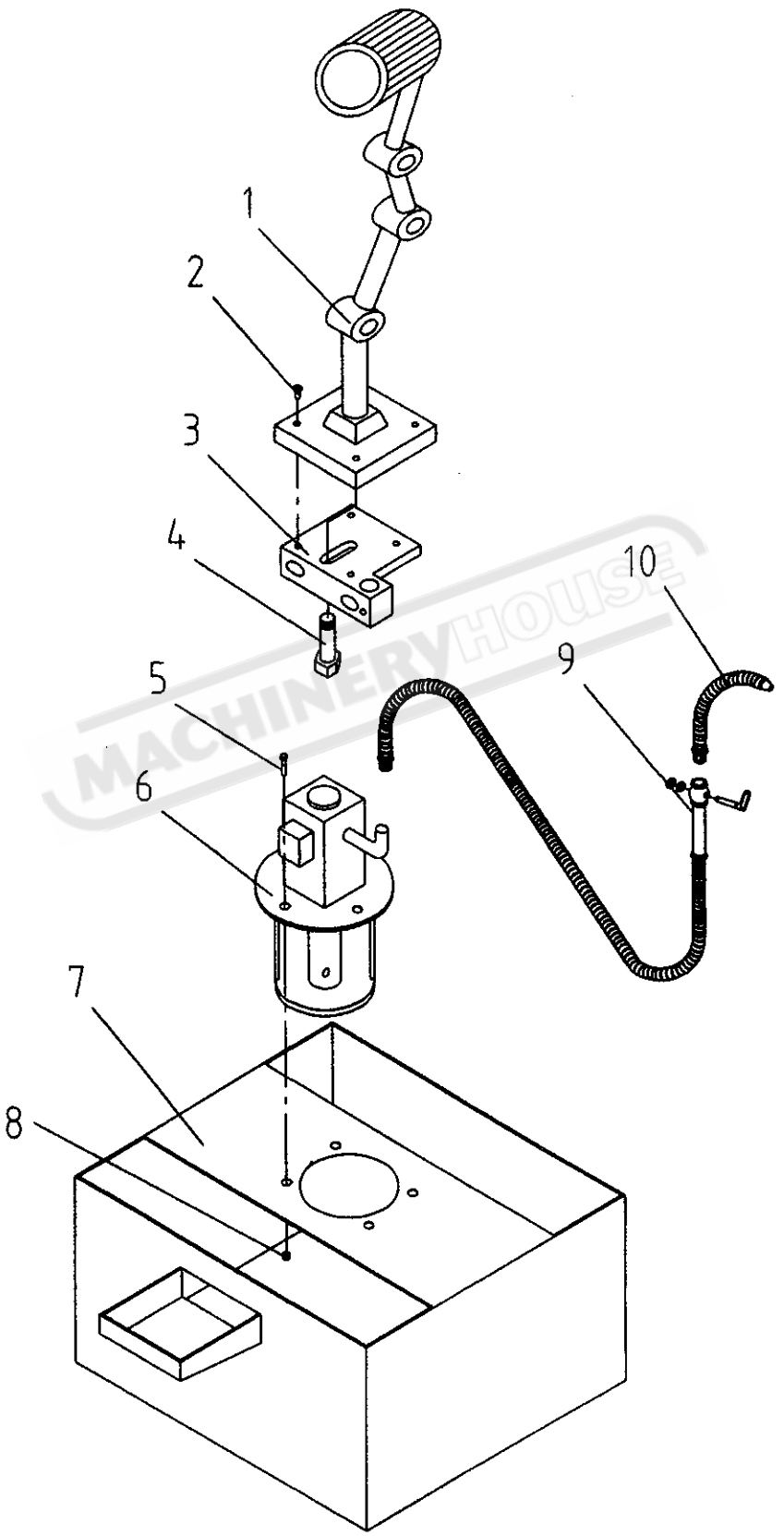


Stand Assembly

Index No.	Part No.	Description	size	Qty.
1	C6240-10029	Cover		1
2	C6240-10028	Power Wire Box		1
3	C6240-10047	Change Gear Cover I		1
4	C6240-10027	Base Behind Cover		1
5	C6240-10036	Base		1
6	C6240-10033	Filter Board		1
7	C6240-10026	Base Cover		2
8	C6240-10045	Cover		4
9	C6240-10035	Name Plate		1
10	C6240-10031	Screw		6
11	C6240-10034	Bracket		1
12	C6240-10038	Brake Redal		1
13	C6240-10043	Name Plate		1
14	C6240-10040	Bracket		1
20	GB70-85	Hex Socket Cap Screw	M6×16	4
21	GB70-85	Hex Socket Cap Screw	M6×10	3
22	GB818-85	Screw	M5×8	23
23	GB818-85	Screw	M6×10	4
24	GB70-85	Hex Socket Cap Screw	M8×20	4
25	GB818-85	Screw	M3×6	6
26	GB879-86	Spring Pin	5×24	5

MACHINERYHOUSE

Coolant and Light Assembly



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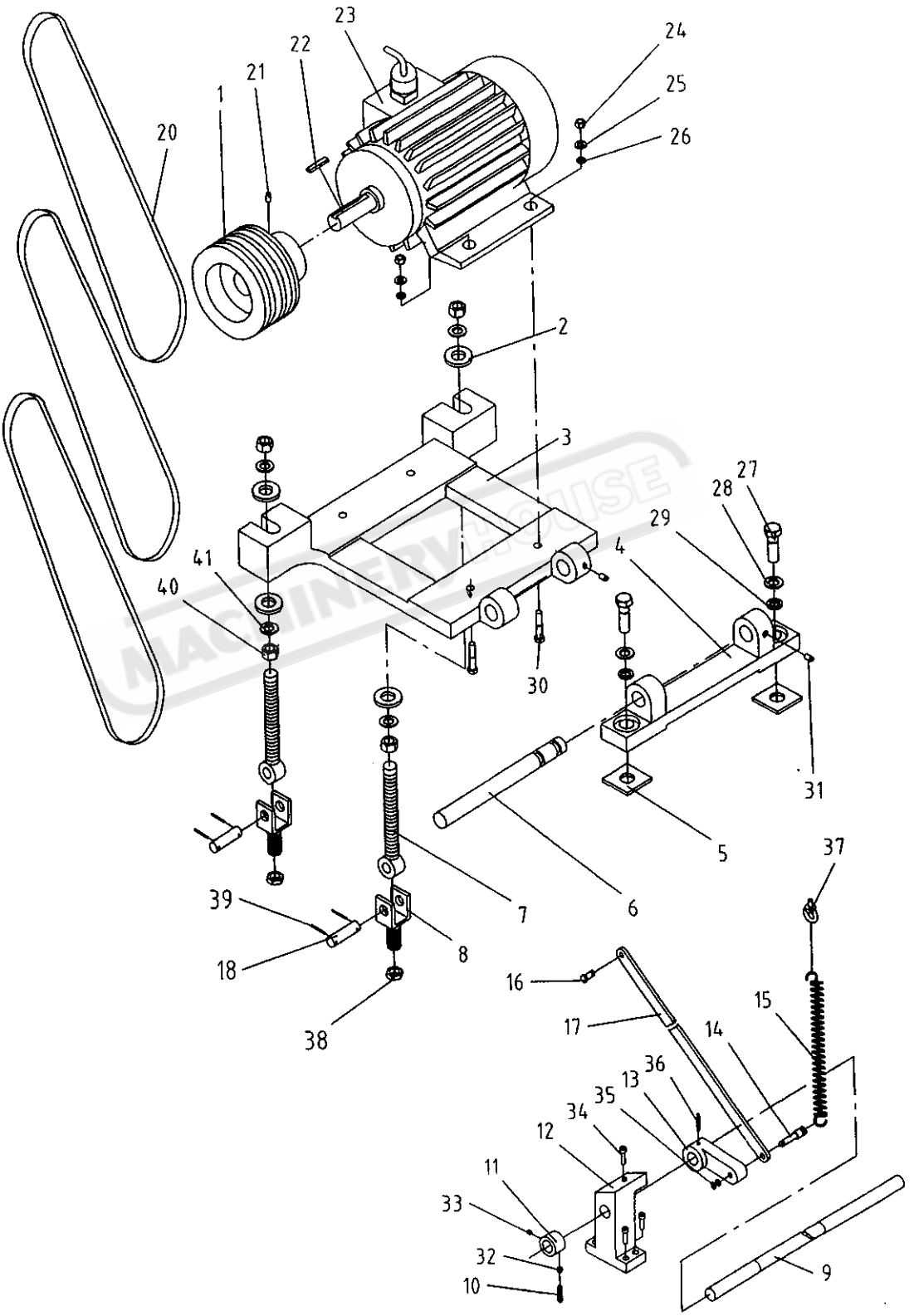
Coolant and Light Assembly

Index No.	Part No.	Descripion	Size	Qty.
1	JC38	Work Light		1
2	GHW-CW02	Cross Head Screw	M6 x 14	4
3	GH-1340A-14-03	Lamp Base		1
4	14-04	Connected Tube		1
5	GHW-CW08	Hex Cap Bolt	M5 x 25	4
6		Coolant Pump	AB-25	1
7	C6240-10032	Coolant Tank		1
8	TS-1540031	Nut		4
9	GHW-CW07	Rubber Tube		1
10	GHW-CW06	Coolant Device		1

MACHINERYHOUSE

Brake Assembly



Brake Assembly

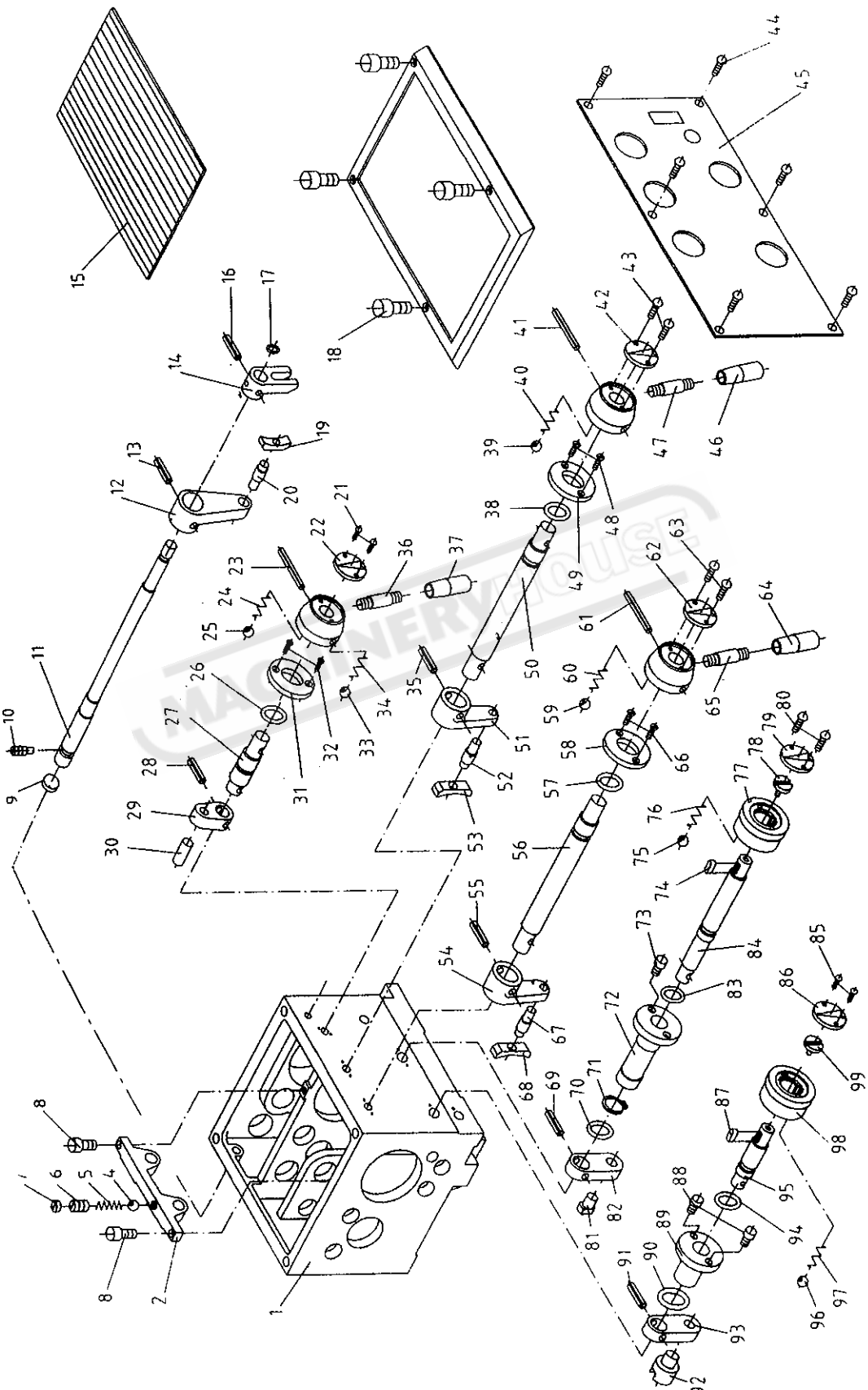
Index No.	Part No.	Description	Size	Qty.
1	C6240-11001A	Pulley		1
2	C6240-11009	Washer		4
3	C6240-11008A	Motor Base		1
4	C6240-11014	Motor Bracket		1
5	C6240-11017	Washer		2
6	C6240-11019	Shaft		1
7	C6240-11010	Connection Screw		2
8	C6240-11006A	Connection Bracket		2
9	C6240-11018	Connection Rod		1
10	GH-1340A-11-14	Screw		1
11	GH-1340A-11-07	Sleeve		1
12	C6136W-1017	Bracket		1
13	C6240-11013A	Switch Rod		1
14	GH-1340A-11-05	Shaft		1
15	GH-1340A-11-04	Spring		1
16	C6136W-1028	Pin		1
17	C6240-11021	Connection Rod		1
18	C6240-11007A	Connection Pin		2
20	GB1171-74	V-Belt	B2057	3
21	GB77-85	Hex Socket Cap Screw	M10×20	1
22	GB1096-79	Flat Key	10×80	1
23	Y132S-4	Motor		1
24	GB6170-86	Hex Nut	M12	4
25	GB97.1-85	Spring Washer	12	4
26	GB93-85	Spring Washer	12	4
27	GB5780-86	Hex Head Screw	M20×45	2
28	GB97.1-85	Spring Washer	20	2
29	GB93-85	Spring Washer	20	2
30	GB5780-86	Hex Head Screw	M12×60	4
31	GB79-85	Screw	M10×20	2
32	GB6170-86	Hex Nut	M6	1
33	GB78-85	Hex Socket Cap Screw	M8×10	1
34	GB70-85	Hex Socket Cap Screw	M8×30	5
35	GB894-86	Shaft Ring	6	2

MACHINERY HOUSE

Index No.	Prat No.	Description	Size	Qty.
36	GB879-86	Spring Pin	5 x 40	1
37	GB825-76	Flying Rings	M8	1
38	GB6172-86	Hex Nut	M20	2
39	GB91-86	Split Pin	3 x 40	4
40	GB6170-86	Hex Nut	M20	4
41	GB97.1-85	Spring Washer	20	4

MACHINERYHOUSE

Headstock Assembly



Headstock Asembly

Index No.	Part No.	Description	Size	Qty.
1	C6240–20011	Headstock Casting		1
2	C6240–20015	Support		1
4	GB308–77	Steel Ball	ϕ 10	1
5	C6240–20030	Spring		1
6	C6240–20029	Spring Base		1
7	C6240–20028	Set Screw		1
8	GB70–85	Hex Socket Cap Screw	M 6 × 20	2
9	C6240–20046	Cover		1
10	GB75–85	Screw	M6 × 12	1
11	C6240–20039	Shifter Rod		1
12	C6240–20045	Shifter Fork		1
13	GB879–86	Spring Pin	5 × 30	1
14	C6240–20038	Shifter Fork		1
15	C6240–20002	Rubber Gasket		1
16	GB879–86	Spring Pin	5 × 30	1
17	GB3452.9–82	Oil Seal	10 × 1.8	1
18	GB70–85	Hex Socket Cap Screw	M10 × 35	4
19	C6240–20012	Shifter Block		1
20	C6240–20033	Shaft		1
21	GB818–86	Screw	M3 × 5	2
22	C6240–20001	Name Plate		1
23	GB879–86	Spring Pin	6 ×60	1
24	C624–20018	Spring		1
25	GB308–77	Steel Ball	ϕ 9	1
26	GB3452.9–82	Oil Seal	15 × 2.65	1
27	C6240–20041	Shifter Rod		1
28	GB879–86	Spring Pin	5 ×30	1
29	C6240–20043	Shifter Fork		1
30	C6240–20042	Pin		1
31	C6240–20017	Position Plate		1
32	GB68–85	Screw	M6 × 12	2
33	GB308–77	Steel Ball	ϕ 9	1
34	C6240–20018	Spring		1
35	GB879–86	Spring Pin	5× 30	1

MACHINERYHOUSE

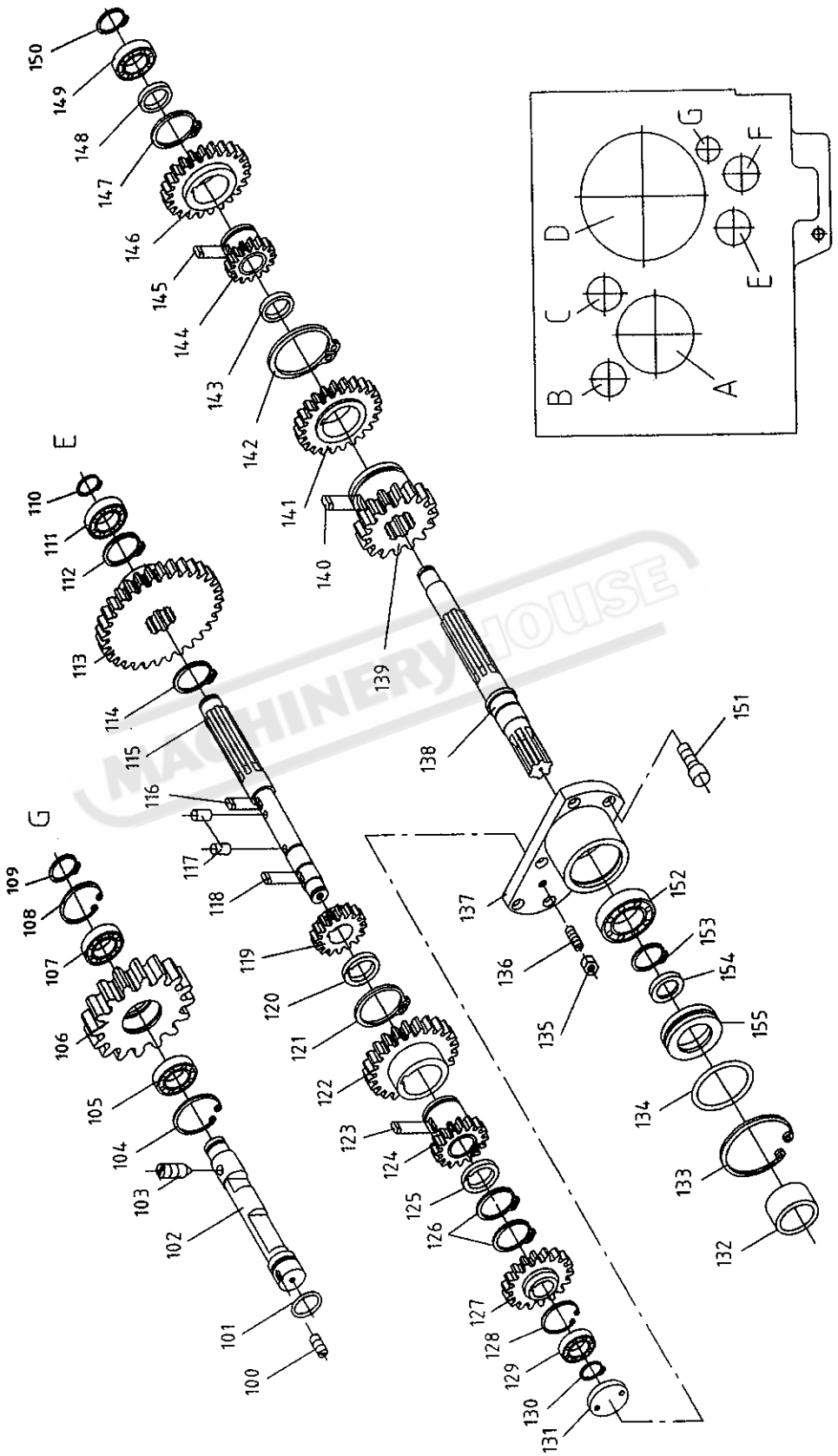
Index No.	Part No.	Description	Size	Qty.
36	C6240-20020	Lever		1
37	GB4141.14-84	knob	BM8 × 40	1
38	GB3452.9-82	Oil Seal	15 × 2.65	1
39	GB308-77	Steel Ball	ϕ 9	1
40	C6240-20018	Spring		1
41	GB879-86	Spring Pin	6 × 60	1
42	C6240-20001	Name Plate		1
43	GB818-86	Screw	M3 × 5	2
44	GB818-86	Screw	M3 × 5	6
45	C6240-20004	Name Plate		1
46	GB4141.14-84	Knob	BM8 × 40	1
47	C6240-20020	Lever		1
48	GB68-85	Screw	M6 × 12	2
49	C6240-20017	Position Plate		1
50	C6240-20016	Shifter Fork		1
51	C6240-20014	Shifter Fork		1
52	C6240-20013	Shaft		1
53	C6240-20012	Shifter Block		1
54	C6240-20032	Shifter Fork		1
55	GB879-86	Spring Pin	5 × 30	1
56	C6240-20031	Shifter Rod		1
57	GB3452.9-82	Oil Seal	15 × 2.65	1
58	C6240-20017	Position Plate		1
59	GB308-77	Steel Ball	ϕ 9	1
60	C6240-20018	Spring		1
61	GB879-86	Spring Pin	6 × 60	1
62	C6240-20001	Name Plate		1
63	GB818-86	Screw	M3 × 5	2
64	GB4141.14-84	Knob	BM8 × 40	1
65	C6240-20020	Lever		1
66	GB68-85	Screw	M6 × 12	2
67	C6240-20033	Shaft		1
68	C6240-20012	Shifter Block		1
69	GB879-86	Spring Pin	4 × 28	1
70	GB3452.9-82	Oil Seal	24 × 2.65	1
71	GB894.2-86	C-Ring	16	1

MACHINERY HOUSE

Index No.	Part No.	Description	Size	Qty.
72	C6240-20025	Long Sleeve		1
73	GB70-85	Hex Socket Cap Screw	M6×12	2
74	GB1096-79	Key	5×12	1
75	GB308-77	Steel Ball	ϕ9	2
76	C6240-20018	Spring		2
77	C6240-20024	Handle Base		1
78	C6240-20023	Screw		1
79	C6240-20001	Name Plate		1
80	GB818-86	Screw	M3×5	2
81	C6240-20026	Shifter Block		1
82	C6240-20021	Shifter Arm		1
83	GB3452.9-82	Oil Seal	12.5×1.8	1
84	C6240-20022	Shaft		1
85	GB818-86	Screw	M3×5	2
86	C6240-20001	Name Plate		1
87	GB1096-79	Key	5×12	1
88	GB70-85	Hex Socket Cap Screw	M6×12	2
89	C6240-20035	Sleeve		1
90	GB3452.9-82	Oil Seal	24×2.65	1
91	GB879-86	Spring Pin	4×28	1
92	C6240-20037	Shifter Fork		1
93	C6240-20052	Shifter Arm		1
94	GB3452.9-82	Oil Seal	12.5×1.8	1
95	C6240-20036	Shaft		1
96	GB308-77	Steel Ball	ϕ9	1
97	C6240-20018	Spring		1
98	C6240-20034	Handle Base		1
99	C6240-20023	Screw		1

MACHINERYHOUSE

Headstock Assembly



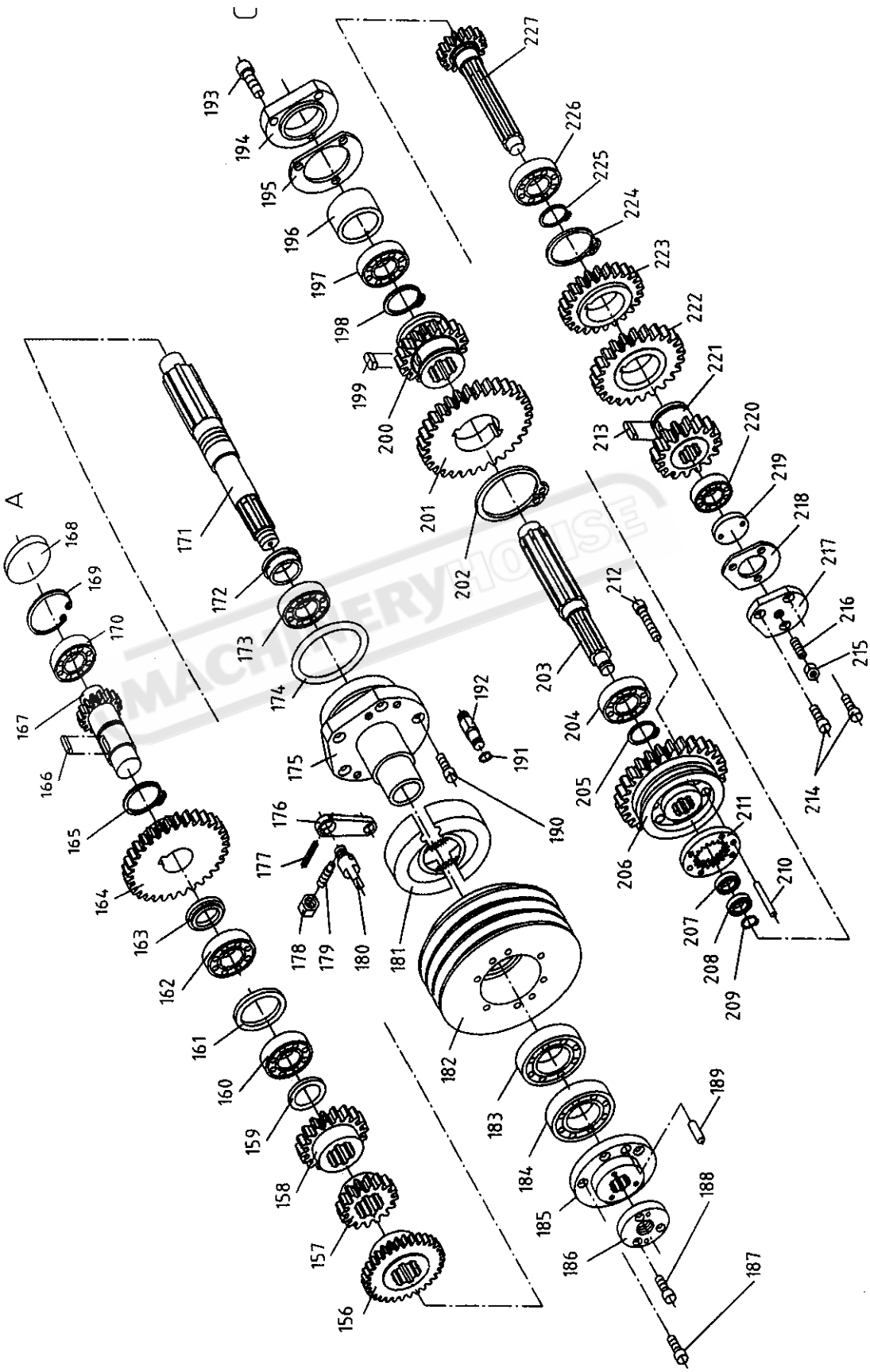
Index No.	Part No.	Description	Size	Qty.
100	GB71-85	Screw	M6 x 12	1
101	GB3452.9-82	Oil Seal	26.5 x 2.65	1
102	C6240-20088	Shaft		1
103	GB71-85	Screw	M6 x 10	1
104	GB893.1-86	C-Ring	47	1
105	GB/T276-94	Bearing	16005/p5	1
106	C6240-20087	Gear		1
107	GB/T276-94	Bearing	16005/p5	1
108	GB893.1-86	C-Ring	47	1
109	GB894.2-86	C-Ring	25	1
110	GB894.2-86	C-Ring	20	1
111	GB/T276-94	Bearing	6204/p5	1
112	GB894.2-86	C-Ring	28	1
113	C6240-20089	Gear		1
114	GB894.2-86	C-Ring	28	1
115	C6240-20090	Spline Shaft		1
116	GB1096-79	Key	6 x 12	1
117	GB119-86	Pin	A3 x 14	2
118	GB1096-79	Key	6 x 12	1
119	C6240-20091	Gear		1
120	C6240-20092	Washer		1
121	GB894.2-86	C-Ring	42	1
122	C6240-20098	Gear		1
123	GB1096-79	Key	6 x 12	1
124	C6240-20102	Gear Assembly		1
125	C6240-20092	Washer		1
126	GB894.2-86	C-Ring	22	2
127	C6240-20109	Gear		1
128	GB893.1-86	C-Ring	47	1
129	GB/T276-94	Baring	6204/p5	1
130	GB894.2-86	C-Ring	20	1
131	C6240-20116	Bearing Cover		1
132	C6240-20107	Reatining Ring		1
133	GB893.1-86	C-Ring	62	1
134	GB3452.9-82	Oil Seal	56 x 2.65	1
135	GB6170-86	Nut	M10	1

MACHINERY HOUSE

Index No.	Part No.	Description	Size	Qty.
136	GB77-85	Screw	M10×25	1
137	C6240-20009	Bearing Base		1
138	C6240-20093	Spling Shaft		1
139	C6240-20103	Gear		1
140	GB1096-79	Key	6×12	1
141	C6240-20104	Gear		1
142	GB894.2-86	C-Ring	45	1
143	C6240-20101	Washer		1
144	C6240-20100	Gear Assembly		1
145	GB1096-79	Key	6×12	1
146	C6240-20099	Gear		1
147	GB894.2-86	C-Ring	42	1
148	C6240-20095	Washer		1
149	GB/T276-94	Bearing	6204/p5	1
150	GB894.2-86	C-Ring	20	1
151	GB70-85	Hex Socket Cap Screw	M8×16	6
152	GB/T276-94	Bearing	6206	1
153	GB894.2-86	C-Ring	30	1
154	GB9877.1-88	Oil Seal	B30×52×7	1
155	C6240-20106	Spacer		1

MACHINERY HOUSE

Headstock Assembly



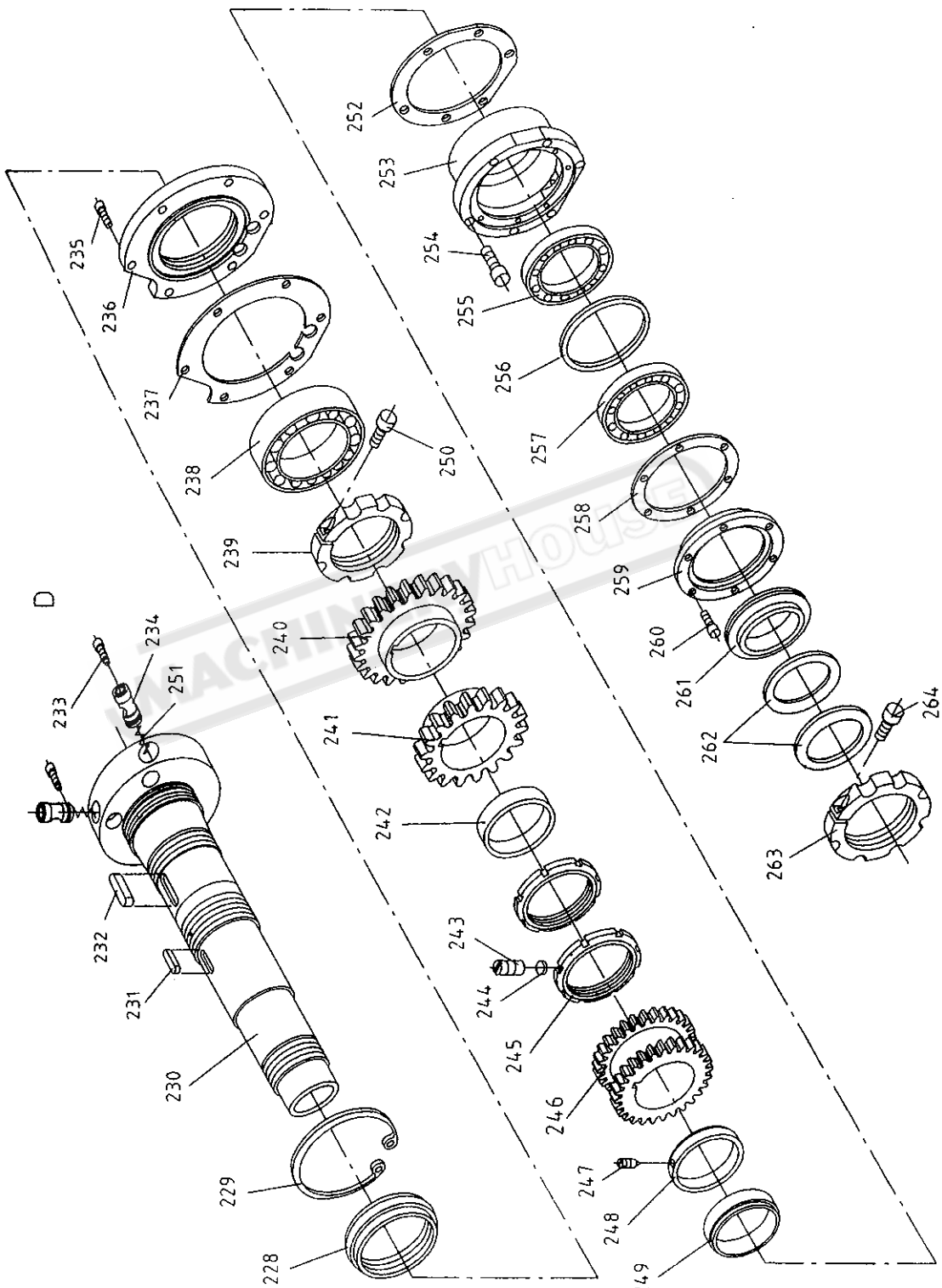
Index No.	Part No.	Description	Size	Qty.
156	C6240-20125	Gear		1
157	C6240-20124	Gear		1
158	C6240-20056	Gear		1
159	C6240-20140	Spacer		1
160	GB/T276-94	Bearing	6306/P5	1
161	C6240-20057	Spacer		1
162	GB/T276-94	Bearing	6306/P5	1
163	C6240-20058	Spacer		1
164	C6240-20059	Gear		1
165	GB894.2-86	C-Ring	40	1
166	GB1096-79	Key	12 x 28	1
167	C6240-20060	Shaft Gear		1
168	C6240-20069	Cover		1
169	GB893.1-86	C-Ring	72	1
170	GB/T276-94	Bearing	6207/P5	1
171	C6240-20127	Spline Shaft		1
172	C6240-20126	Spacer		1
173	GB/T276-94	Bearing	6207/P5	1
174	GB3452.9-82	Oil Seal	95 x 3.55	1
175	C6240-20135A	Bearing Base		1
176	C6136W-2202	Brake Board		1
177	GB879-86	Spring Pin	5 x 30	1
178	GB6170-86	Hex Nut	M8	1
179	GB75-85	Screw	M8 x 20	1
180	C6240-20144	Shaft		1
181		Brake Block		1
182	C6240-20133	Pulley		1
183	GB/T276-94	Bearing	6209/p5	1
184	GB/T276-94	Bearing	6209/p5	1
185	C6240-20129	Spline Sleeve		1
186	C6240-20128	Paper Pad		1
187	GB70-85	Hex Socket Cap Screw	M6 x 16	6
188	GB70-85	Hex Socket Cap Screw	M6 x 16	3
189	GB117-86	Taper Pin	A6 x 25	2
190	GB70-85	Hex Socket Cap Screw	M8 x 16	5
191	GB894.2-86	C-Ring	8	1

MACHINERY HOUSE

Index No.	Part No.	Description	Size	Qty.
192	C6240-20143	Brake Screw		1
193	GB70-85	Hex Socket Cap Screw	M8 × 16	3
194	C6240-20072	Cover		1
195	C6240-20071	Paper Pad		1
196	C6240-20141	Spacer Sleeve		1
197	GB/T276-94	Bearing	6206	1
198	GB894.2-86	C-Ring	42	1
199	GB1096-79	Key	10 × 15	1
200	C6240-20068-1	Gear		1
201	C6240-20068-2	Gear		1
202	GB894.2-86	C-Ring	60	1
203	C6240-20070	Spline Shaft		1
204	GB/T276-94	Bearing	6206	1
205	GB894.2-86	C-Ring	30	1
206	C6240-20066	Gear		1
207	GB/T276-94	Bearing	61903/P5	1
208	GB/T276-94	Bearing	61903/P5	1
209	GB894.2-86	C-Ring	17	1
210	GB117-86	Taper Pin	A6 × 25	1
211	C6240-20073	Gear		1
212	GB70-85	Hex Socket CapScrew	M6 × 30	4
213	GB1096-79	Key	8 × 25	1
214	GB70-85	Hex Socket CapScrew	M6 × 16	3
215	GB6170-86	Hex Nut	M10	1
216	GB77-85	Screw	M10 × 25	1
217	C6240-20120	Cover		1
218	C6240-20118	Gasket		1
219	C6240-20122	Cover		1
220	GB/T276-94	Bearing	6204/P5	1
221	C6240-20142	Gear		1
222	C6240-20123	Gear		1
223	C6240-20121	Gear		1
224	GB894.2-86	C-Ring	50	1
225	GB894.2-86	C-Ring	30	1
226	GB/T276-94	Bearing	6206	1
227	C6240-20117	Shaft Gear		1

MACHINERYHOUSE

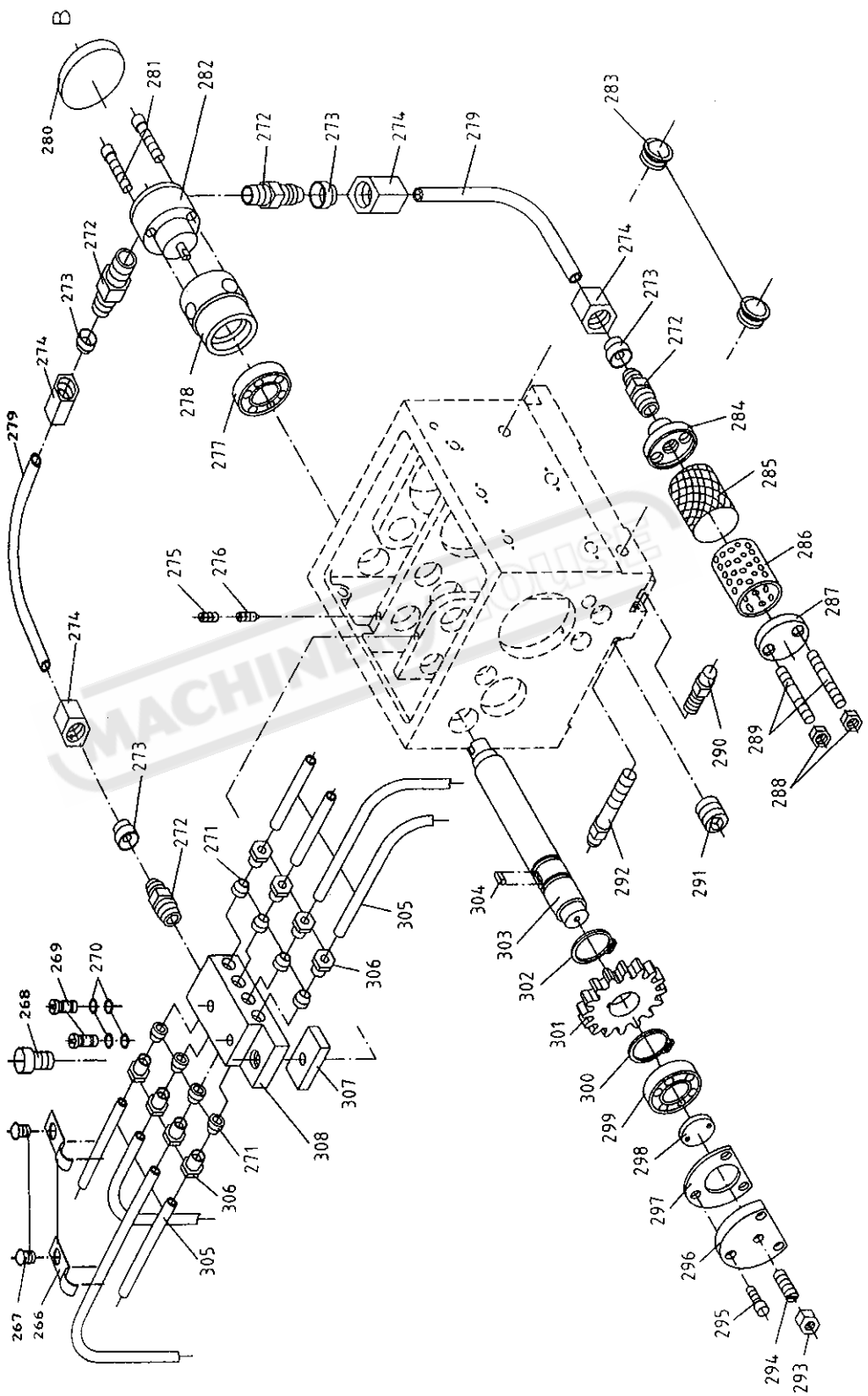
Headstock Assembly



Index No.	Part No.	Description	Size	Qty.
228	C6240-20077	Nut		1
229	GB893.1-86	C-Ring	180	1
230	C6240-20075	Spindle		1
231	GB1096-79	Key	12× 32	1
232	GB1096-79	Key	16× 45	1
233	C6240-20078	Screw		6
234	C6240-20074	Cam		6
235	GB70-85	Hex Socket Cap Screw	M8× 25	6
236	C6240-20076	Spindle Front Cover		1
237	C6240-20086	Paper Pad		1
238	GB/T285-94	Double Row Cylindrical Roller Bearing NN3024K/w33/p5		1
239	C6240-20079	Nut		1
240	C6240-20080	Gear		1
241	C6240-20085	Gear		1
242	C6240-20081	Washer		1
243	GB77-85	Screw	M8× 16	1
244	CQ6232A-1023	Washer		1
245	C6240-20082	Nut		2
246	C6240-20083	Gear		1
247	GB71-85	Screw	M10×12	1
248	C6240-20084	Adjust Washer		1
249	C6240-20110	Spacer		1
250	GB70-85	Hex Socket Cap Screw	M8×20	1
251	C6240-20018	Spring		6
252	C6240-20118	Gasket		1
253	C6240-20111	Spindle Rear Bearing Base		1
254	GB70-85	Hex Socket Cap Screw	M8×30	6
255	GB/T292-94	Baering	7020Ac/BD/P5	1
256	C6240-20132	Spacer		1
257	GB/T292-94	Bearing	7020Ac/BD/P5	1
258	C6240-20112	Paper Pad		1
259	C6240-20136	Set Sleeve		1
260	GB70-85	Hex Socket Cap Screw	M6×16	6
261	C6240-20113	Oil Ring		1
262	C6240-20014	Spring Washer		2
263	C6240-20015	Nut		1
264	GB70-85	Hex Socket Cap Screw	M8×20	1

MACHINERYHOUSE

Headstock Assembly



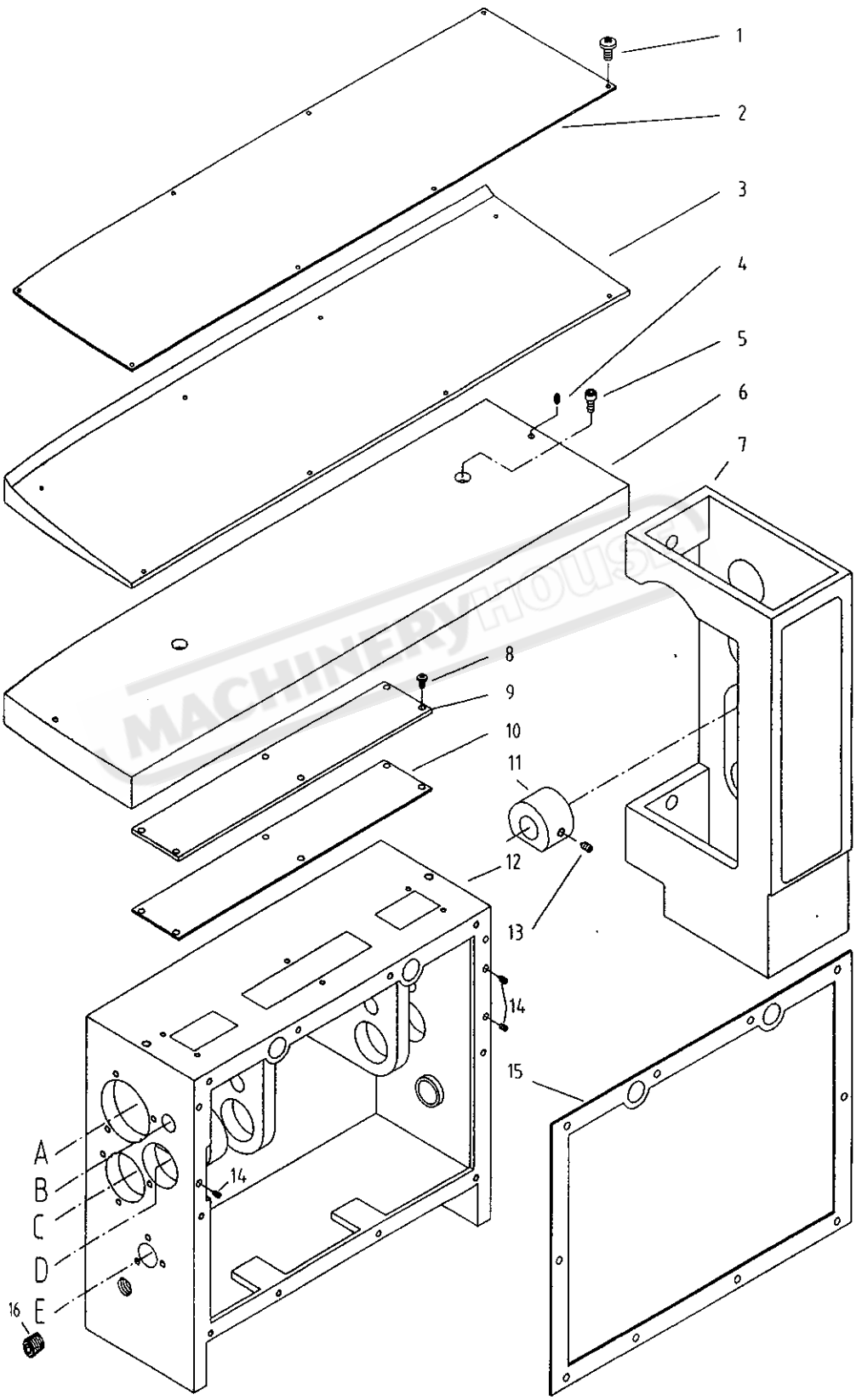
Index No.	Part No.	Description	Size	Qty.
266	C6240-20051	Plate		4
267	GB818-86	Screw	M5×8	4
268	GB70-85	Hex Socket Cap Screw	M8×30	1
269	C6240-20050	Oiler		2
270	GB3452.9-82	Oil Seal	4.5×1.8	4
271	C6240-20049	Joint		8
272	C6240-20063	Joint		4
273	C6240-20064	Protection Ring		4
274	C6240-20062	Nut		4
275	GB77-85	Hex Socket Cap Screw	M10×25	1
276	GB78-85	Screw	M10× 12	1
277	GB/T276-94	Bearing	6004	1
278	C6240-20061	Valve Body		1
279		Copper Pipe	ϕ8×0.5	1m
280	C6240-20065	Cover		1
281	GB70-85	Hex socket Cap Screw	M6×55	3
282	KBBY-3-2B	Oil Pump		1
283	GB1160.1-89	Oil Sight Glass	16	2
284	C6240-20094	Joint		1
285		Screen	40"	
286	C6240-20096	Filtrator		1
287	C6240-20097	Filtrator Cover		1
288	GB6170-86	Nut	M4	2
289	GB901-88	Blot	M4×55	2
290	C6240-20010	Adjust Screw		1
291	GH-1340A-05-75	Plug		1
292	C6240-20008	Adjust Screw		1
293	GB6170-86	Nut	M10	1
294	GB77-85	Screw	M10×25	1
295	GB70-85	Hex Socket Cap Screw	M6×16	3
296	C6240-20138	Cover		1
297	C6240-20139	Paper Pad		1
298	C6240-20122	Cover		1
299	GB/T276-94	Bearing	6204/p5	1
300	GB894.2-86	C-Ring	25	1
301	C6240-20055	Gear		1

MACHINERY HOUSE

Index No.	Part No.	Description	Size	Qty.
302	GB894.2-86	C-Ring	25	1
303	C6240-20054	Shaft		1
304	GB1096-79	Key	6 × 16	1
305		Copper Pipe	ϕ4 × 0.5	4m
306	C6240-20047	Joint		8
307	C6240-20027	Block		1
308	C6240-20048	Oil Valve		1

MACHINERYHOUSE

Gear Box Assembly

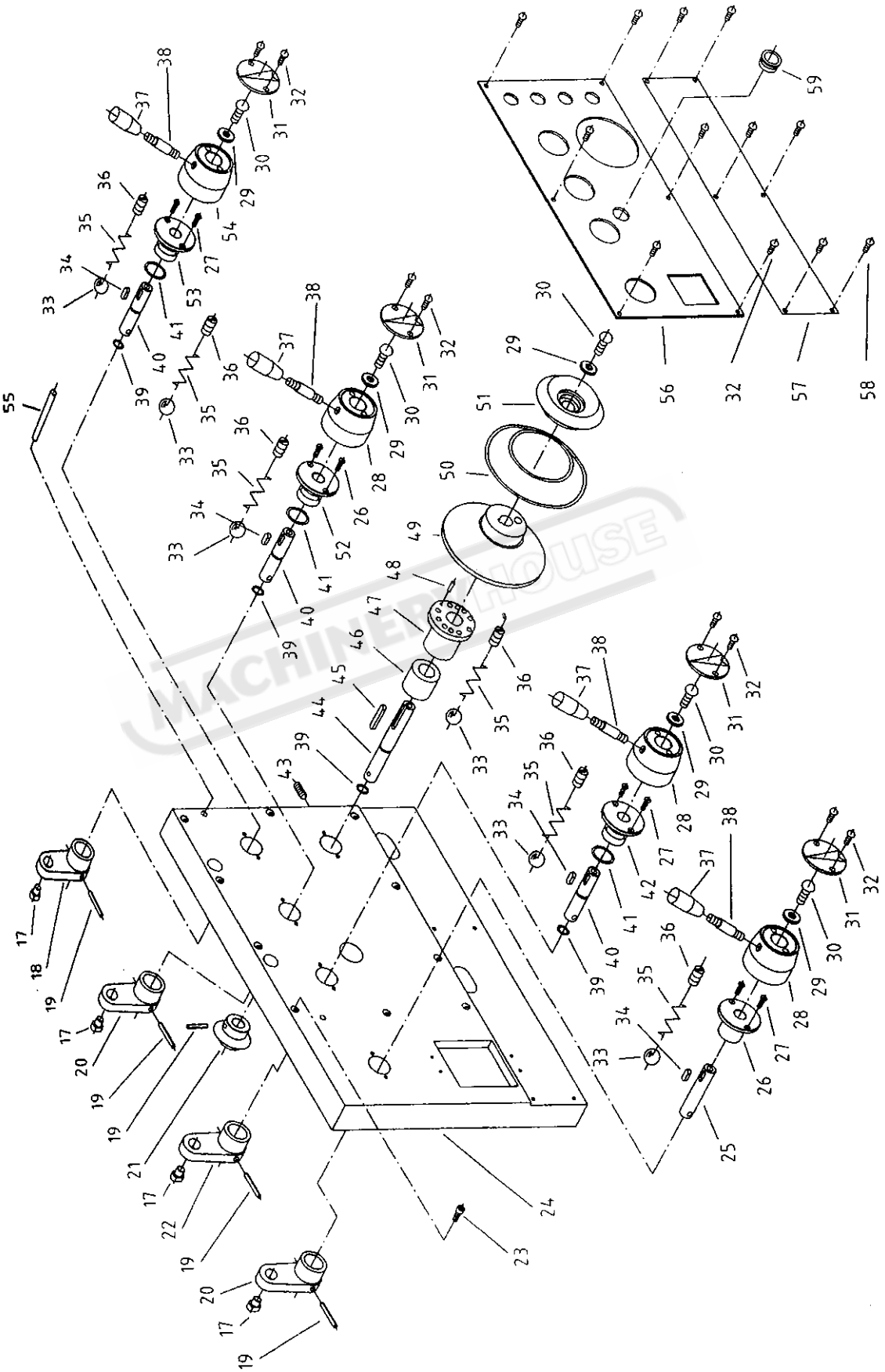


Gear Box Assembly

Index No.	Part No.	Description	Size	Qty.
1	GB818-85	Screw	M3 × 6	8
2	C6240-30062	Name Plate		1
	C6240-30062(Metric)	Name Plate		1
3	C6240-30061	Top Cover		1
4	GB77-85	Screw	M6 × 16	2
5	GB70-85	Hex Scoket Cap Screw	M8 × 35	2
6	C6240-30060	Box Cover		1
7	C6240-30059	Bracket		1
8	GB818-85	Screw	M5 × 8	6
9	C6240-30063	Cover		1
10	C6240-30064	Washer		1
11	C6240-30058	Cam		1
12	C6240-30001	Gear Box		1
13	GB78-85	Screw	M8 × 10	1
14	GB79-85	Screw	M6 × 20	1
15	C6240-30065	Washer		1
16	GH-1340A-06-35	Plug		1

MACHINERY HOUSE

Gear Box Assembly



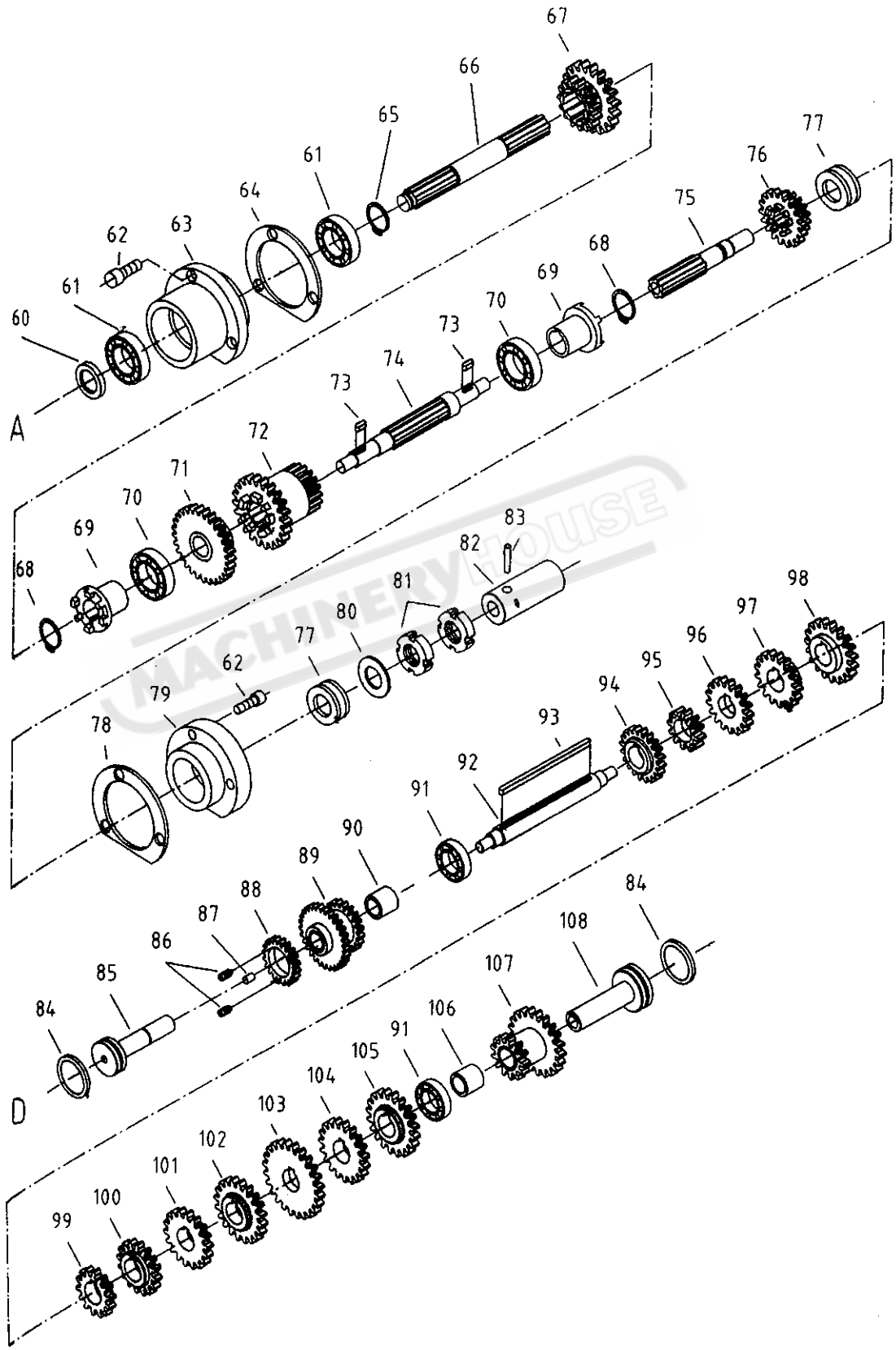
Index No.	Part No.	Description	Size	Qty.
17	C6240-30067	Fork Shfter		4
18	C6240-30070	Arm		1
19	GB879-86	Spring Pin	5 × 30	5
20	C6240-30082	Arm		2
21	C6240-30081	Bevel Gear		1
22	C6240-30088	Arm		1
23	GB70-85	Hex Socket Cap Screw	M6 × 45	10
24	C6240-30066	Front Cover		1
25	C6240-30084	Shaft		1
26	C6240-30085	Set Sleeve		1
27	GB819-85	Screw	M6 × 12	8
28	C6240-30083	Handle		3
29	C6240-30073	Washer		5
30	GB818-85	Screw	M8 × 12	5
31	C6240-30056	Name Plate		4
32	GB818-85	Screw	M3 × 6	14
33	GB308-89	Steel Ball	6.5	6
34	GB1096-79	Key	5 × 14	4
35	GB2089-80	Spring	1 × 5 × 20	6
36	GB77-85	Screw	M8 × 8	6
37	GB4141.14-84	Knob	BM10 × 50	4
38	C6240-30071	Lever		4
39	GB3452.1-82	Seal Ring	12.5 × 1.8	4
40	C6240-30074	Shaft(VII)		3
41	GB3452.1-82	Seal Ring	23.6 × 3.35	4
42	C6240-30087	Set Sleeve		1
43	GB79-85	Screw	M8 × 35	1
44	C6240-30077	Shaft		1
45	GB1096-79	Key	5 × 28	1
46	C6240-30080	Spacer		1
47	C6240-30078	Shaft Sleeve		1
48	GB117-86	Taper Pin	A3 × 12	1
49	C6240-30079	Selecting Dial		1
50	C6240-30055	Name Plate		1
51	C6240-30076	Hand Wheel		1
52	C6240-30091	Set Sleeve		1

MACHINERY HOUSE

Index No.	Part No.	Description	Size	Qty.
53	C6240-30075	Set Sleeve		1
54	C6240-30072	Handle		1
55	GB118-86	Pin	6 x 55	2
56	C6240-30057	Name Plate		1
57	C6240-30097	Front Cover		1
58	GB818-85	Screw	M5 x 8	6
59	GB1160-79	Oil Sight Glass	A32	1

MACHINERYHOUSE

Gear Box Assembly



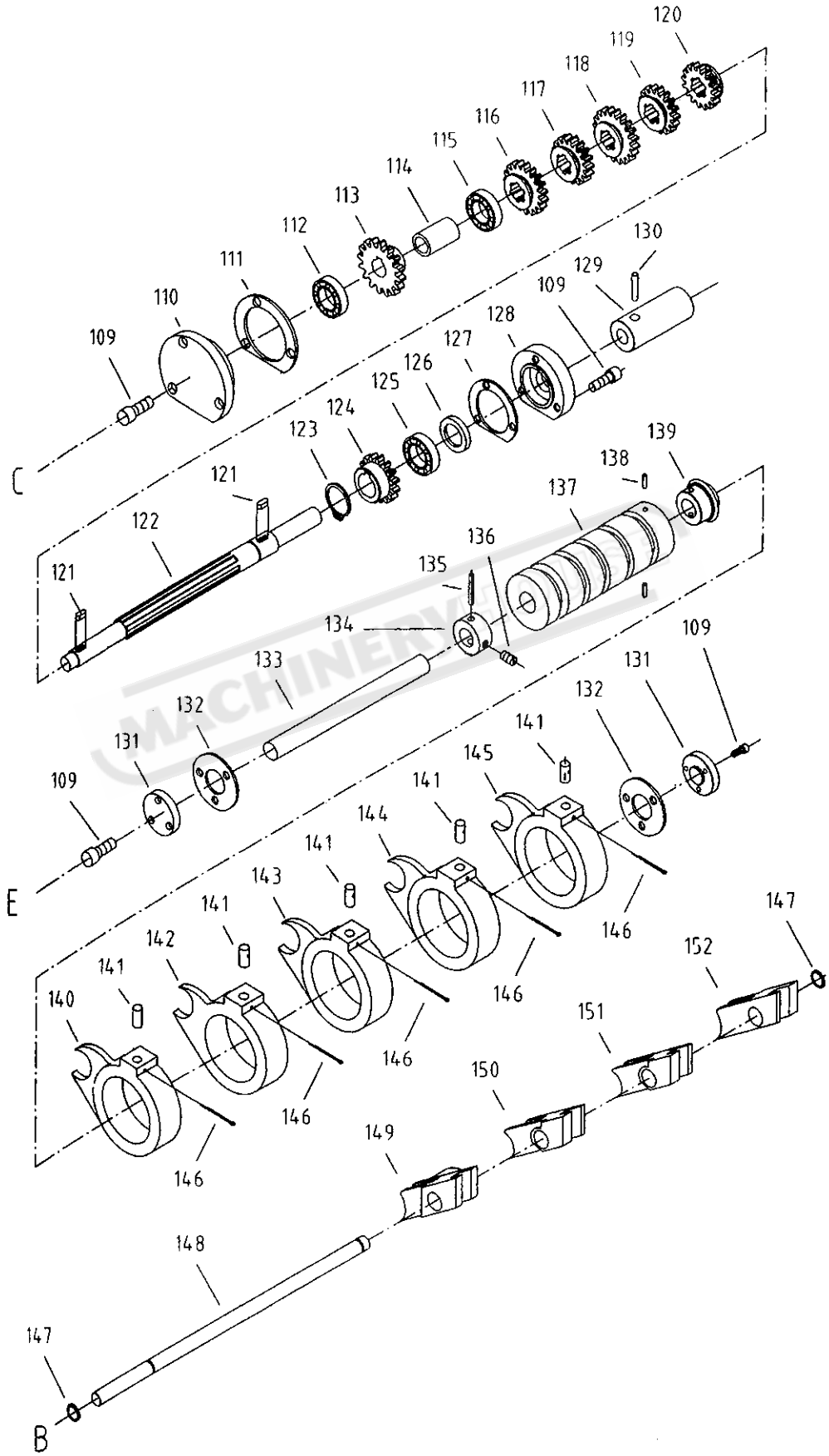
Index No.	Part No.	Description	Size	Qty.
60	GB9877.1-88	Seal Ring	25 x 47 x 7	1
61	GB/T276-94	Bearing	6005-2RS	2
62	GB70-85	Hex Socket Cap Screw	M6 x 16	6
63	C6240-30030	Bearing Cover		1
64	C6240-30031	Seal Washer		1
65	GB894.1-86	Snap Ring	25	1
66	C6240-30029A	Shaft		1
67	C6240-30032	Gear		1
68	GB894.1-86	Snap Ring	18	2
69	C6240-30033	Clutch		2
70	GB/T276-94	Bearing	6005	2
71	C6240-30034	Gear		1
72	C6240-30036	Gear		1
73	GB1096-79	Key	4 x 20	2
74	C6420-30035A	A-Shaft		1
75	C6240-30053	C-Shaft		1
76	C6240-30054	Gear		1
77	GB301-95	Bearing	51104	2
78	C6240-30052	Seal Washer		1
79	C6240-30051	Bearing Cover		1
80	C6240-30098	Washer		1
81	GB812-88	Round Nut	M20 x 1.5	2
82	C6240-30020	Connection Sleeve		1
83	GB117-86	Taper Pin	A6 x 35	1
84	GB3452.1-82	Seal Ring	33.5 x 3.35	2
85	C6240-30016	Gear Shaft		1
86	GB71-85	Screw	M6 x 8	2
87	GB119-86	Pin	A6 x 8	1
88	C6240-30017/2	Gear		1
89	C6240-30017/1	Gear		1
90	C6240-30092	Shaft Sleeve		1
91	GB/T276-94	Bearing	6203	2
92	C6240-30018	D-Shaft		1
93	C6240-30019	Key		1
94	C6240-30037	Gear		1
95	C6240-30038	Gear		1

MACHINERYHOUSE

Index No.	Part No.	Description	Size	Qty.
96	C6240-30039	Gear		1
97	C6240-30040	Gear		1
98	C6240-30041	Gear		1
99	C6240-30042	Gear		1
100	C6240-30043	Gear		1
101	C6240-30044	Gear		1
102	C6240-30045	Gear		1
103	C6240-30046	Gear		1
104	C6240-30047	Gear		1
105	C6240-30048	Gear		1
106	C6240-30093	Shaft Sleeve		1
107	C6240-30049	Gear		1
108	C6240-30050	F-Shaft		1

MACHINERYHOUSE

Gear Box Assembly



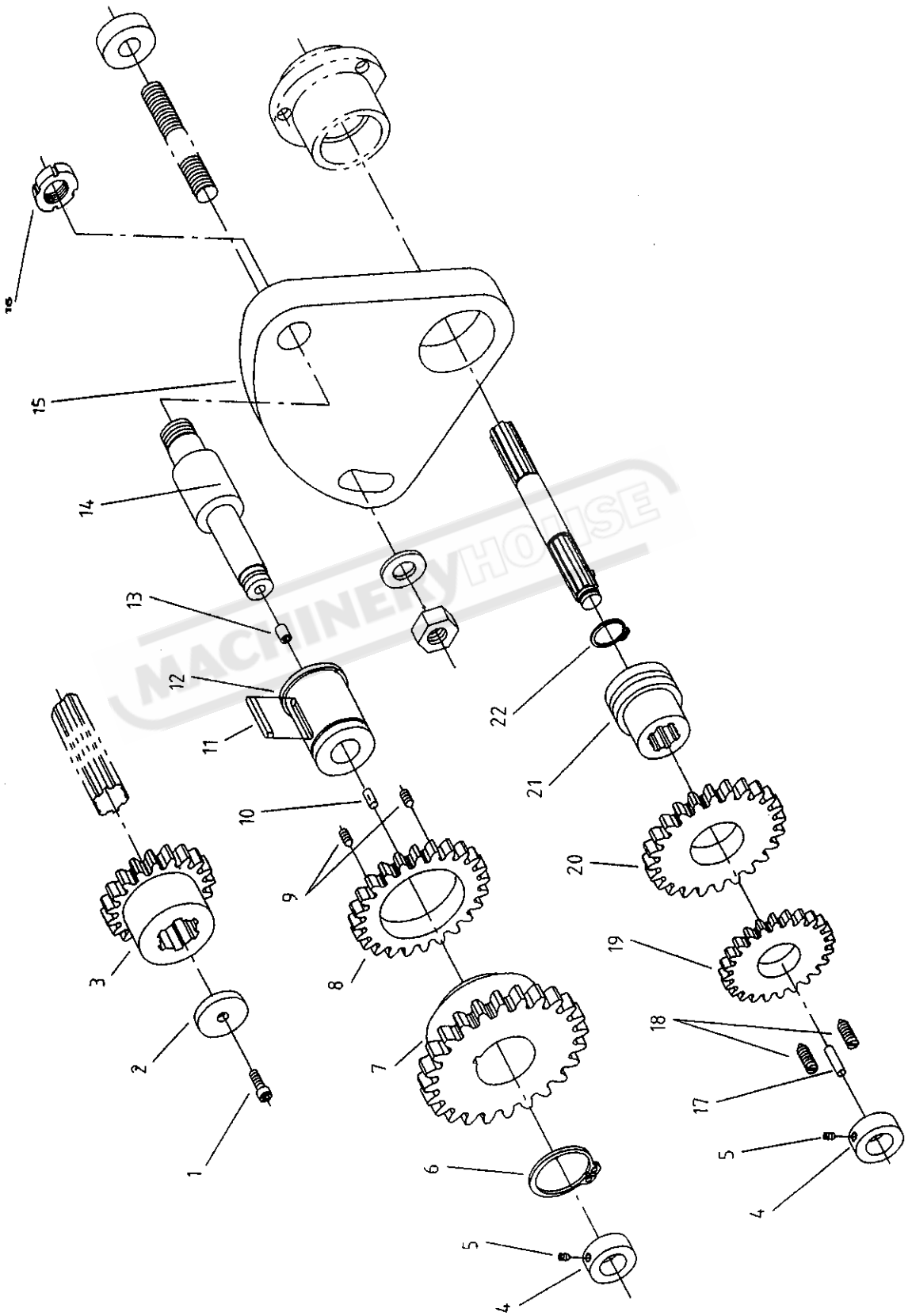
Index No.	Part No.	Description	Size	Qty.
109	GB70-85	Hex Socket Cap Screw	M6 x 12	12
110	C6240-30015	Bearing Cover		1
111	C6240-30014	Washer		1
112	GB/T276-94	Bearing	6003	1
113	C6240-30012	Gear		1
114	C6240-30011	Spacer		1
115	GB/T276-94	Bearing	6004	1
116	C6240-30028	Gear		1
117	C6240-30027	Gear		1
118	C6240-30026	Gear		1
119	C6240-30025	Gear		1
120	C6240-30024	Gear		1
121	GB1096-79	Key	6 x 20	2
122	C6240-30013	G-Shaft		1
123	GB894.1-86	Snap Ring	25	1
124	C6240-30023	Gear		1
125	GB/T276-94	Bearing	6204	1
126	GB9877.1-88	Seal Ring	20 x 40 x 7	1
127	C6240-30021	Washer		1
128	C6240-30022	Bearing Cover		1
129	C6240-30096	Connection Sleeve		1
130	GB117-86	Taper Pin	A6 x 35	1
131	C6240-30094	Cover		2
132	C6240-30095	Washer		2
133	C6240-30010	Cam Shaft		1
134	C6240-30009	Spacer		1
135	GB879-86	Spring Pin	5 x 40	1
136	GB78-85	Screw	M8 x 10	1
137	C6240-30008	Cam		1
138	GB879-86	Spring Pin	5 x 16	2
139	C6240-30002	Bevel Gear		1
140	C6240-30007	Fork Shifter		1
141	GB119-86	Pin	8 x 16	5
142	C6240-30006	Fork Shifter		1
143	C6240-30005	Fork Shifter		1
144	C6240-30004	Fork Shifter		1

MACHINERYHOUSE

Index No.	Part No.	Description	Size	Qty.
145	C6240-30003	Fork Shifter		1
146	GB91-86	Split Pin	2 x 30	5
147	GB3452.1-82	Seal Ring	12.5 x 1.8	2
148	C6240-30068	Shaft		1
149	C6240-30086	Arm		1
150	C6240-30089	Arm		1
151	C6240-30090	Arm		1
152	C6240-30069	Arm		1

MACHINERYHOUSE

Change Gear Assembly

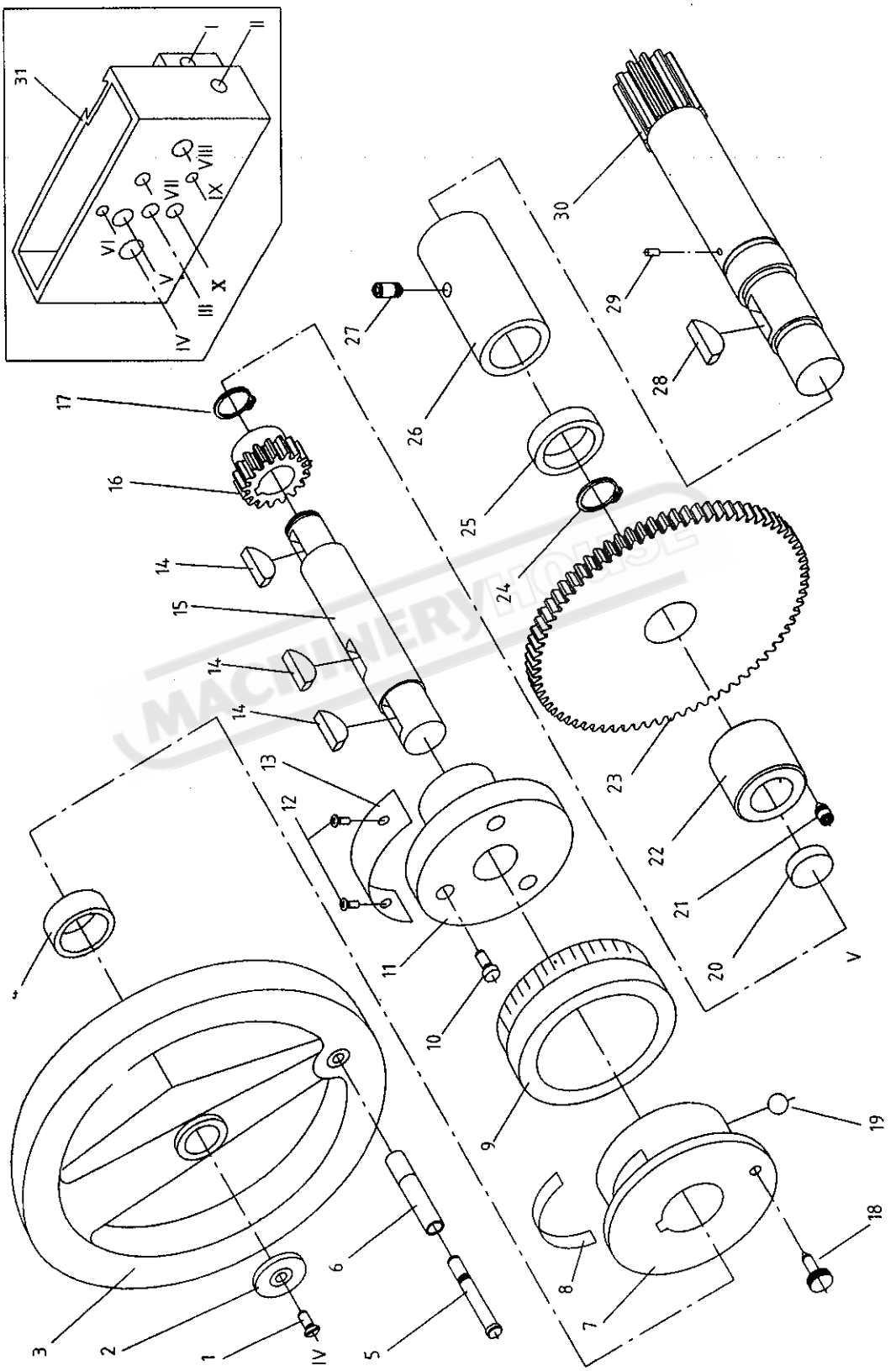


Change Gear Assembly

Index No.	Part No.	Description	Size	Qty.
1	GB70-85	Hex Socket Cap Screw	M8 x 16	1
2	C6240-20108	Washer		1
3	C6240-31001	Change Gear	Z=48	1
	C6240-31001(Metric)	Change Gear	Z=70	1
4	GB72-88	Screw	M6 x 8	2
5	C6136B-4028	Spacer		2
6	GB894.1-86	Snap Ring	45	1
7	C6240-31002-2	Change Gear	Z=66	1
	C6240-31002-2(Metric)	Change Gear	Z=77	1
8	C6240-31002-1	Change Gear	Z=57	1
	C6240-31002-1(Metric)	Change Gear	Z=50	1
9	GB71-85	Screw	M8 x 12	2
10	GB119-86	Pin	A6 x 12	1
11	GB1096-79	Key	6 x 35	1
12	C6136B-4100	Sleeve		1
13	GB155-89	Oil Cup	8	1
14	C6240-31003	Shaft		1
15	C6240-31004	Bracket		1
16	GB812-88	Round Nut	M24 x 1.5	1
17	GB119-86	Pin	A6 x 22	1
18	GB71-85	Screw	M8 x 22	2
19	C6240-31005-2	Change Gear	Z=42	1
	C6240-31005-2(Metric)	Change Gear	Z=51	1
20	C6240-31005-1	Change Gear	Z=57	1
	C6240-31005-1(Metric)	Change Gear	Z=50	1
21	C6240-31005-3	Spline Sleeve		1
22	GB894.1-86	Snap Ring	25	1

MACHINERYHOUSE

Apron Assembly

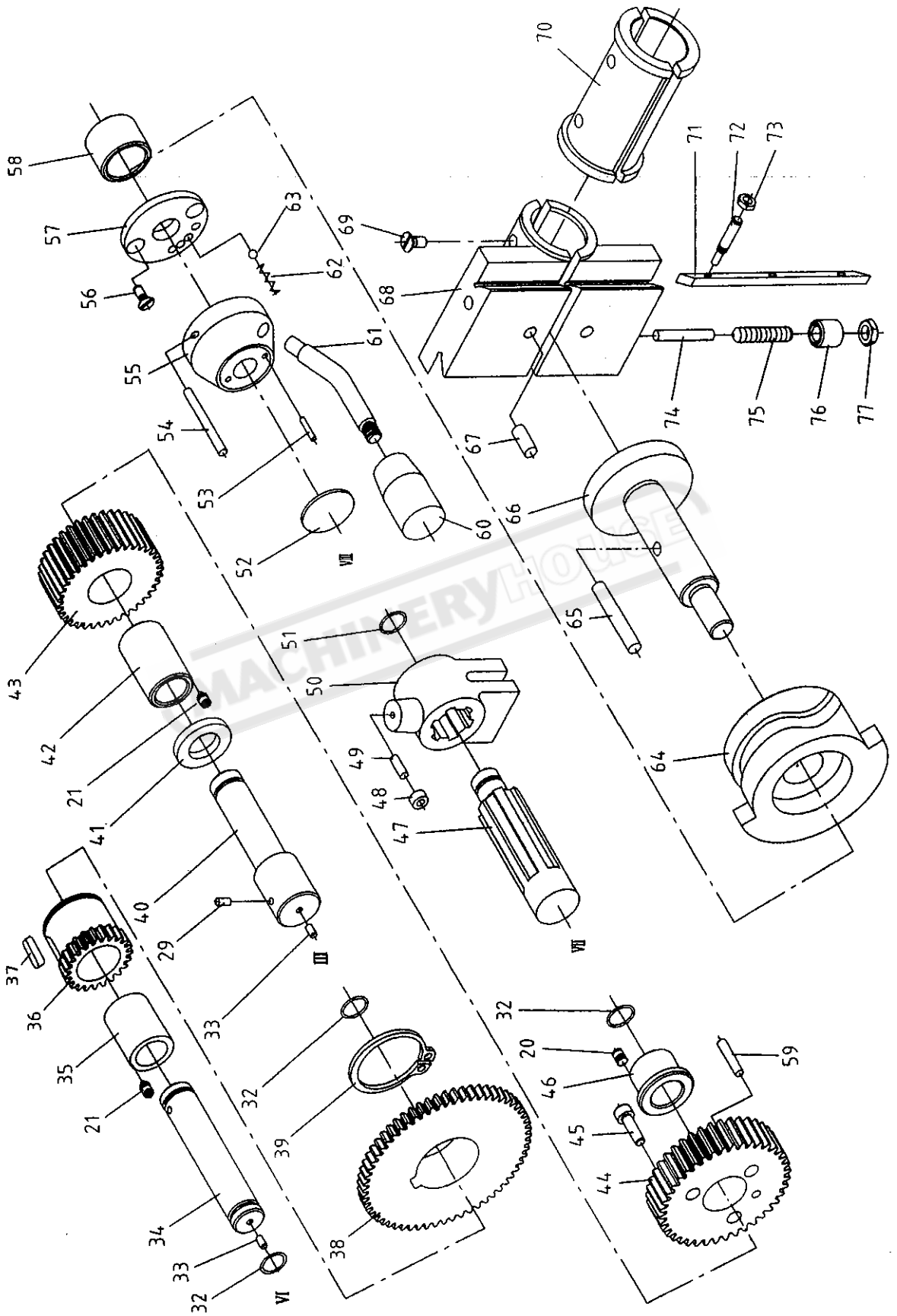


Apron Assembly

Index No.	Part No.	Description	Size	Qty.
1	GB68-85	Screw	M6× 10	6
2	C6240-40006	Washer		1
3	C6240-40001	Hand Wheel		1
4	C6240-40005	Space Collar		1
5	C6240-60013	Hand Wheel Lever Stud		1
6	C6240-60013	Hand Wheel Lever		1
7	C6240-40010	Plate		1
8	C6240-40003	Spring		1
9	C6240-40002	Dial Ring		1
10	GB70-85	Hex Cap Screw	M6× 12	8
11	C6240-40007	Flange		1
12	GB818-86	Screw	M3×5	14
13	C6240-40011	Name Plate		1
14	GB1099-79	Half-Round Key	5× 7.5× 19	3
15	C6240-40004	Shaft		1
16	C6240-40008	Gear		1
17	GB894-76	C-Ring	17	1
18	C6240-40009	Screw		1
19	GB308-89	Steel Ball	5.556	1
20	C6240-40012	Plug		1
21	GB71-85	Set Screw	M6×8	8
22	C6240-40013	Sleeve		1
23	C6240-40014	Gear		1
24	GB894-76	C-Ring	25	1
25	C6240-40015	Washer		1
26	C6240-40017	Sleeve		1
27	GB71-85	Set Screw	M6×12	2
28	GB1099-79	Half-Round Key	6× 9× 22	1
29	GB119-86	Cylinder Plug	3×6	4
30	C6240-40018	Gear Shaft		1
31	C6240-40016	Housing		1

MACHINERY HOUSE

Apron Assembly



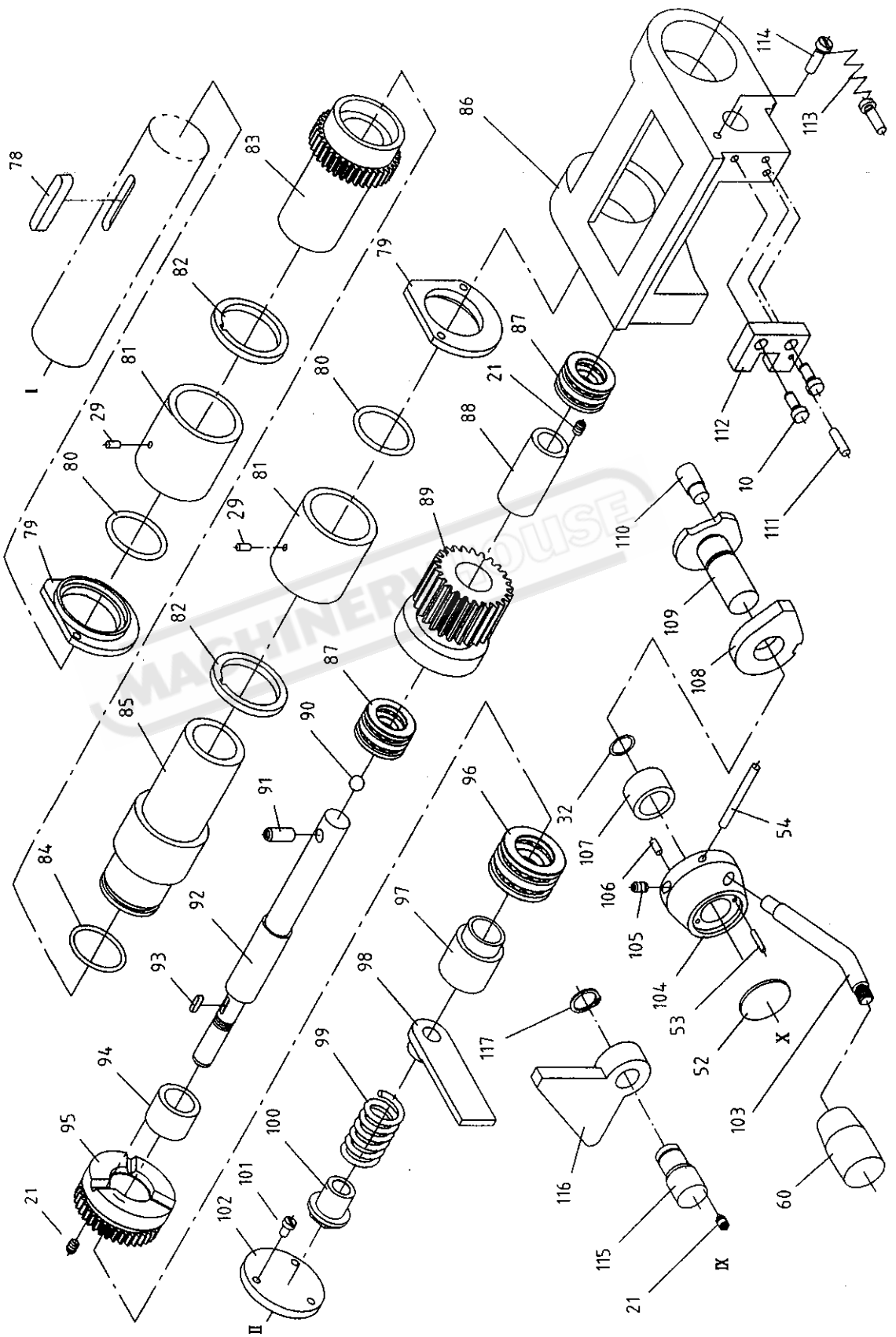
Index No.	Part No.	Description	Size	Qty.
32	GB3452.9-82	Seal Ring	17 x 1.8	4
33	C6240-40021	Plug		2
34	C6240-40022	Shaft		1
35	C6240-40023	Shaft Sleeve		1
36	C6240-40020	Gear		1
37	GB1096-79	Flat Key	6 x 20	1
38	C6240-40019	Gear		1
39	GB894-76	C-Ring	40	1
40	C6240-40026	Shaft		1
41	C6240-40027	Washer		1
42	C6240-40028	Sleeve		1
43	C6240-40029	Gear		1
44	C6240-40024	Turbine Gear		1
45	GB70-85	Hex Socker Cap Screw	M6 x 20	3
46	C6240-40025	Sleeve		1
47	C6240-40030	Spline Shaft		1
48	C6240-40032	Slide Block		1
49	GB119-86	Cylinder Plug	5 x 14	1
50	C6240-40031	Driving Fork		1
51	GB3452.9-82	Seal Ring	11.8 x 1.8	1
52	C6240-40033	Plug		2
53	GB119-86	Pin	3 x 16	2
54	GB117-86	Pin	5 x 50	2
55	C6240-40034	Lever Base		1
56	GB68-85	Screw	M5 x 10	2
57	C6240-40035	Washer		1
58	C6240-40036	Spacing Collar		1
59	GB117-86	Pin	5 x 25	1
60	GB4141.14-84	Lever Knob	M10 x 50	3
61	C6240-40079	Lever Rod		1
62	GB1239.1-89	Spring	1.2 x 8 x 16	1
63	GB308-89	Steel Ball	9.525	1
64	C6240-40037	Cam		1
65	GB118-86	Pin	8 x 50	1
66	C6240-40038	Shaft		1
67	GB119-86	Cylinder Plug	8 x 16	2

MACHINERY HOUSE

Index No.	Part No.	Description	Size	Qty.
68	C6240-40039	Body		1
69	GB68-85	Screw	M6× 12	4
70	C6240-40040	Thread Nut		1
70	C6240-40040(Metric)	Thread Nut		1
71	C6240-40086	Gib		1
72	C6240-40087	Screw		3
73	GB6172-82	Nut	M6	3
74	GB119-86	Cylinder Plug	6×40	1
75	GB78-85	Screw	M8×40	1
76	C6240-40041	Sleeve		1
77	GB6172-82	Nut	M8	2

MACHINERYHOUSE

Apron Assembly



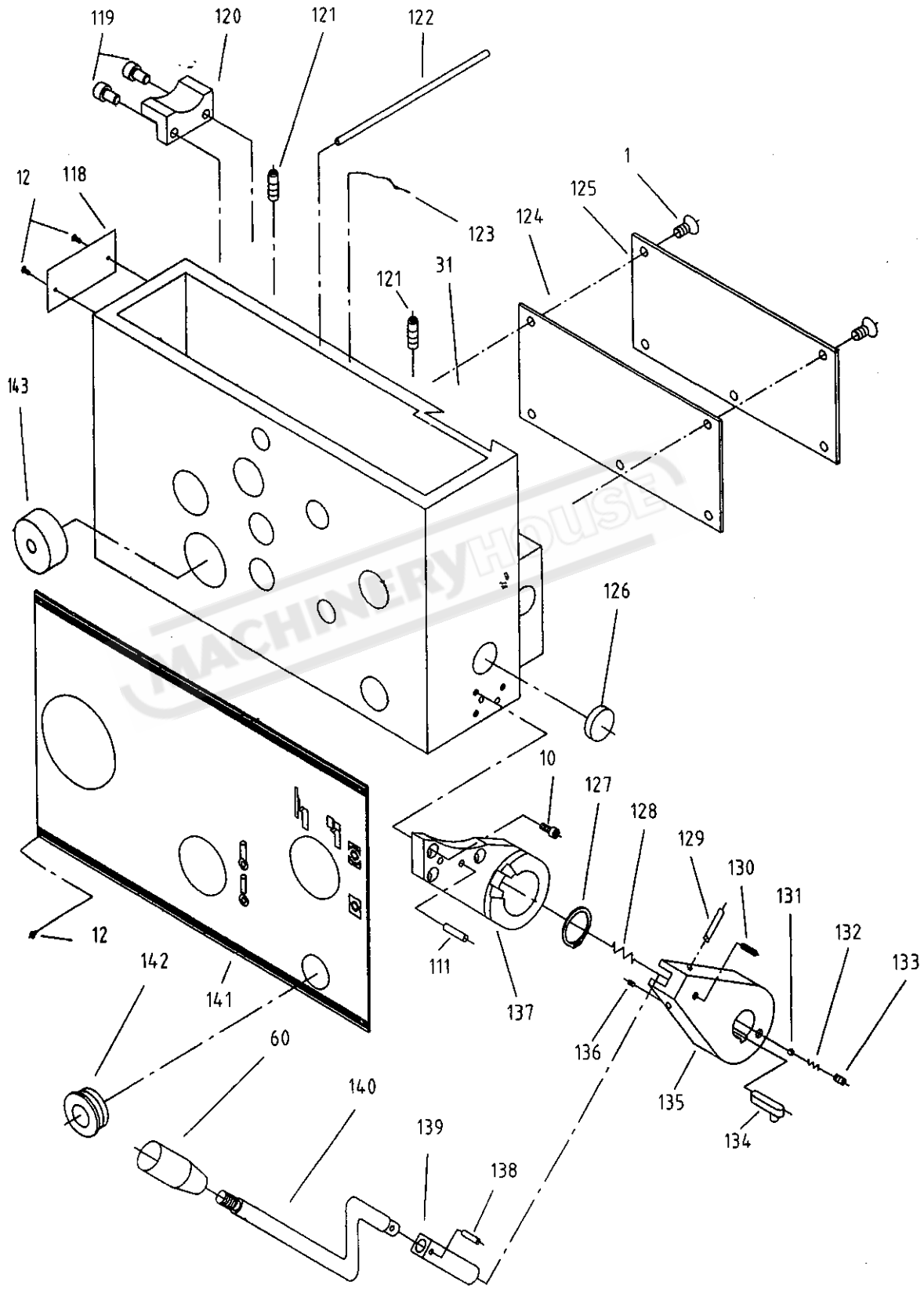
Index No.	Part No.	Description	Size	Qty.
78	C6240-40045	Key		1
79	C6240-40043	Oil Seal		2
80	GB3452.9-82	Sel Ring	38 x 3.55	2
81	C6240-40044	Sleeve		1
82	C6240-40047	Washer		2
83	C6240-40046	Gear Shaft		1
84	GB3452.9-82	Seal Ring	35.5 x 2.65	1
85	C6240-40048	Sleeve		1
86	C6240-40065	Cradle		1
87	GB301-95	Bearing	51103	2
88	C6240-40062	Sleeve		1
89	C6240-40061	Worm		1
90	GB308-89	Stell Ball	8.73	3
91	GB71-85	Screw	M8 x 20	1
92	C6240-40070	Shaft		1
93	GB1096-79	Flat Key	3 x 8	1
94	C6240-40064	Sleeve		1
95	C6240-40063	Gear		1
96	GB301-95	Bearing	51105	1
97	C6240-40066	Sleeve		1
98	C6240-40067	Driving Fork		1
99	C6240-40068	Spring		1
100	C6240-40069	Adjusting Screw		1
101	GB65-85	Screw	M5 x 8	1
102	C6240-40042	Cover		1
103	C6240-40080	Lever Bod		1
104	C6240-40059	Lever Base		1
105	GB71-85	Screw	M6 x 10	2
106	GB119-86	Cylinder Plug	4 x 10	1
107	C6240-40058	Sleeve		1
108	C6240-40056	Support		1
109	C6240-40060	Shaft		1
110	C6240-40057	Cylinder Plug		1
111	GB117-86	Pin	5 x 20	5
112	C6240-40055	Plate		1
113	C6240-40051	Spring		1

MACHINERY HOUSE

Index No.	Part No.	Description	Size	Qty.
114	GB68-85	Screw	M6 × 20	1
115	C6240-40086	Shaft		1
116	C6240-40087	Lock Block		1
117	GB894-76	C-Ring	16	1

MACHINERYHOUSE

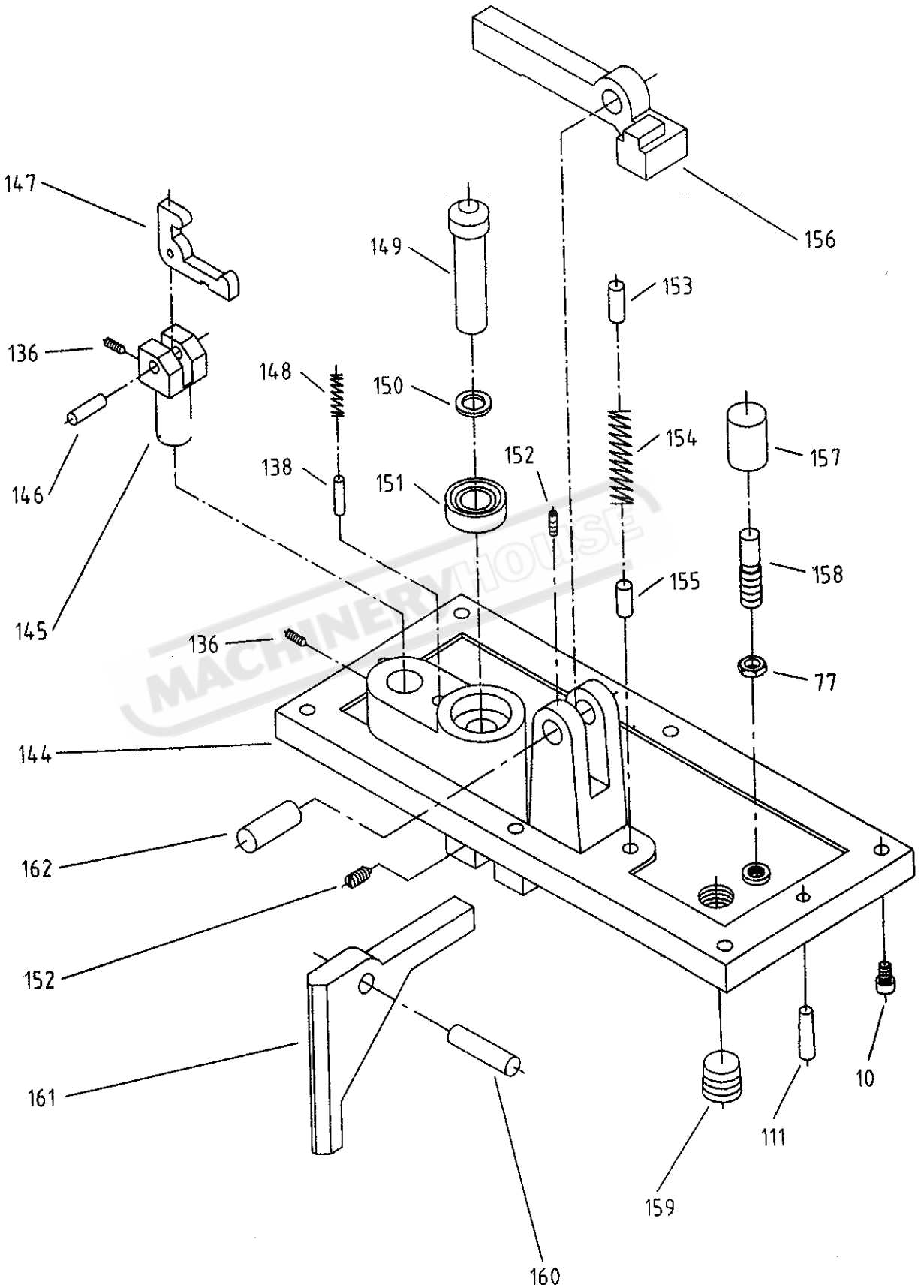
Apron Assembly



Index No.	Part No.	Description	Size	Qty.
118	C6240-40082	Name Plate		1
119	GB70-85	Screw	M6×10	2
120	C6240-40083	Support		1
121	GB71-85	Screw	M6×20	2
122	C6240-40085	Vitta		2
123		Wool Line		
124	C6240-40049	Rubber Gasket		1
125	C6240-40050	Behind Cover		1
126	C6240-40054	Plug		1
127	GB894-76	C-Ring	35	1
128	GB1239.1-89	Spring	1.5×10×16	1
129	GB119-86	Clinder Plug	5×30	1
130	GB71-85	Screw	M6× 16	1
131	GB308-89	Steel Ball	6	1
132	GB1239.1-89	Spring	1×5×18	1
133	GB78-85	Screw	M8× 10	1
134	C6240-40090	Key		1
135	C6240-40088	Lever Base		1
136	GB71-85	Screw	M4× 6	3
137	C6240-40089	Positioning Block		1
138	GB119-86	Clinder Plug	4×15	2
139	C6240-40091	Lever Head		1
140	C6240-40092	Lever Rod		1
141	C6240-40081	Name Plate		1
142	GB1160.1-89	Oil Sight Glass	A16	1
143	C6240-40100	Plug		1

MACHINERY HOUSE

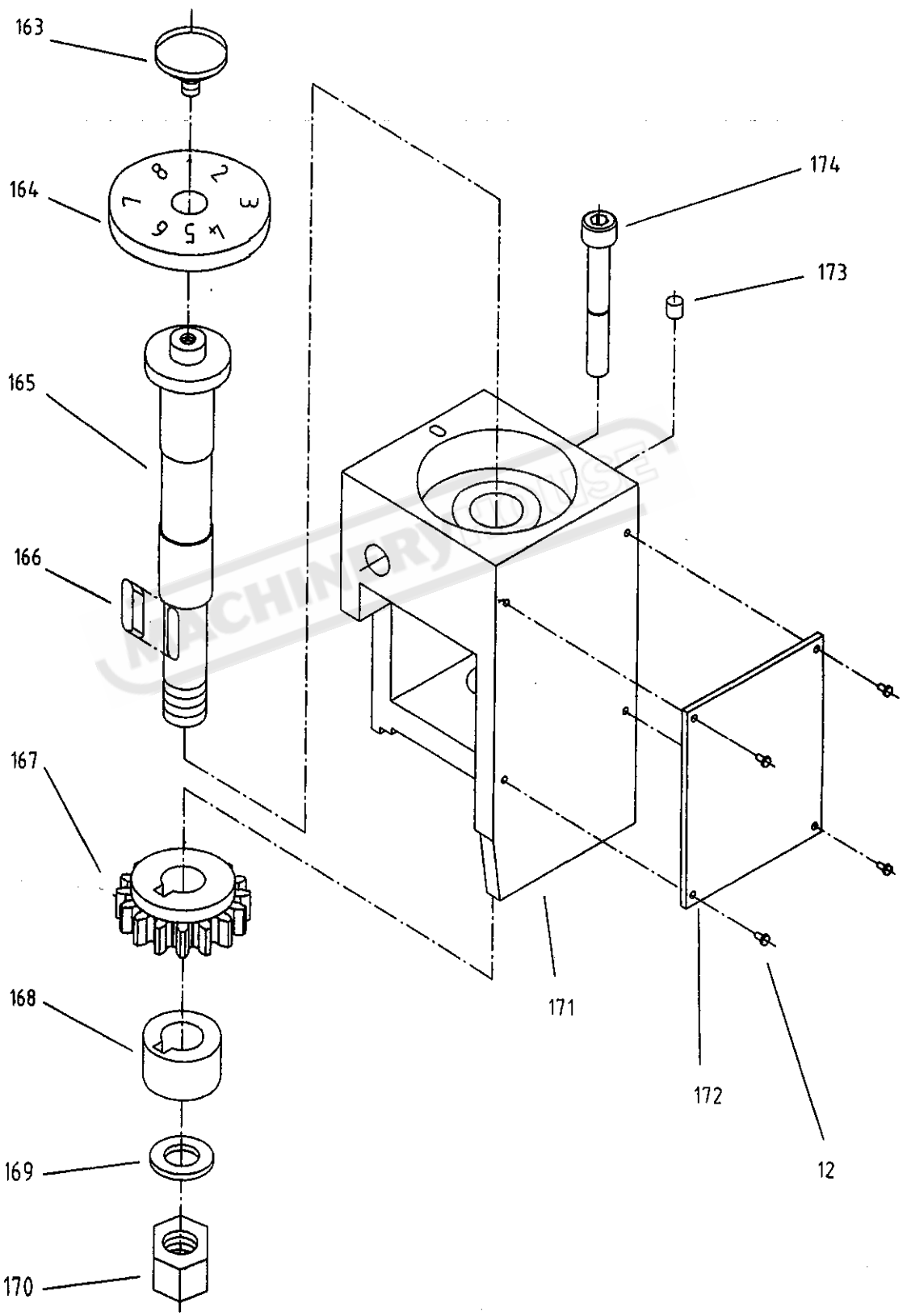
Apron Assembly



Index No.	Part No.	Description	Size	Qty.
144	C6240-40073	Cover		1
145	GB119-86	Clinder Plug	6×12	1
146	GB119-86	Clinder Plug	5×16	1
147	C6240-40077	Lever		1
148	GB1239.1-89	Spring	0.5×5×20	1
149	C6240-40076	Pin		1
150	GB3452.9-82	Seal Ring	9×1.8	1
151	GB9877.1-88	Seal Ring	B12×24×5	1
152	GB71-85	Screw	M5×6	2
153	GB119-86	Clinder Plug	6×16	1
154	GB1239.1-89	Spring	1.2×10×42	1
155	C6240-40078	Support Pin		1
156	C6240-40074	Lever		1
157	C6240-40072	Rubber Pad		1
158	C6240-40071	Screw		1
159	GH-1340-06-35	Oil Plug		1
160	GB119-86	Clinder Plug	8×30	1
161	C6240-40084	Touch Block		1
162	C6240-40075	Pin		1

MACHINERY HOUSE

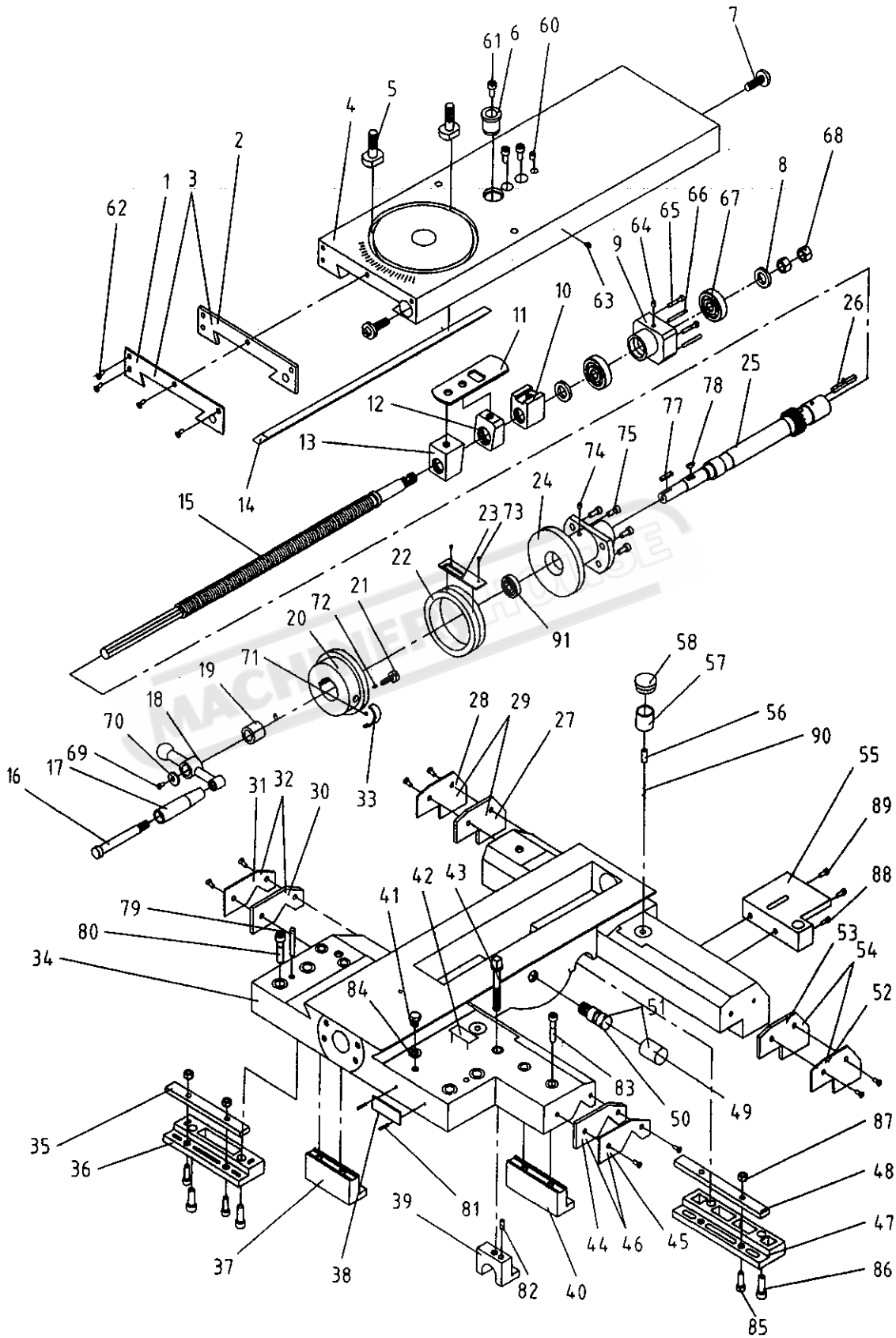
Apron Assembly



Index No.	Part No.	Description	Size	Qty.
163	C6240-40097	Screw		1
164	C6240-40096	Dial Plate		1
165	C6240-40098	Shaft		1
166	GB1096-79	Key	4 x 16	1
167	C6240-40094	Gear		1
168	C6240-40095	Sleeve		1
169	GB97.2-85	Washer	12	1
170	GB6171-85	Nut	M12 x 1.25.	1
171	C6240-40093	Housing		1
172	C6240-40099	Name Plate		1
173	GB1155-79	Oil cup	ϕ6	1
174	GB70-85	Screw	M8 x60	1

MACHINERYHOUSE

Carriage & Cross Slide Assmbly



Carriage & Cross Slide Assembly

Index No.	Part No.	Description	Size	Qty.
1	C6240-50055/1	Cavalry		1
2	C6240-50055/2	Latex		1
3	C6240-50055	Scrapper		1
4	C6240-50043	Cross Slide		1
5	C6240-50027	Screw		2
6	C6240-50022	Sleeve		1
7	C6240-50025	Screw		2
8	C6240-50020	Washer		2
9	C6240-50019	Flange		1
10	C6240-50039	Nut		1
	C6240-50039(Metric)	Nut		1
11	C6240-50040	Washer		1
12	C6240-50041	Wedge		1
13	C6240-50042	Nut		1
	C6240-50042(Metric)	Nut		1
14	C6240-50010	Gib		1
15	C6240-50021	Feed Screw		1
	C6240-50021(Metric)	Feed Screw		1
16	C6240-50013/1	Handle Shaft		1
17	C6240-50013/2	Handle Base		1
18	C6240-50032	Handle Base		1
19	C6240-50035	Sleeve		1
20	C6240-50033	Inner Ring Dial		1
21	C6240-50031	Screw		1
22	C6240-50004	Outer Ring Doal		1
	C6240-50004(Metric)	Outer Ring Doal		1
23	C6240-50057	Name Plate		1
24	C6240-50028	Flange		1
	C6240-50028(Metric)	Flange		1
25	C6240-50037	Shaft Gear		1
26	C6240-50036	Slide Key		1
27	C6240-50059/1	Latex		1
28	C6240-50059/2	Cavalry		1
29	C6240-50059	Scrapper(Left)		1

MACHINERY HOUSE

Index No.	Part No.	Description	Size	Qty.
30	C6240-50057/1	Latex		1
31	C6240-50057/2	Cavalry		1
32	C6240-50057	Scrapper(Left)		1
33	C6240-50030	Spring Leaf		1
34	C6240-50001	Saddle		1
35	C6240-50063	Plate		1
36	C6240-50062	Pressure Plate		1
37	C6240-50038	Front Press Plate(Left)		1
38	C6240-50053	Name Plate		1
39	C6240-50058	Pressure Plate		1
40	C6240-50046	Front Press Plate(Right)		1
41	C6240-50052	Oil Plug		1
42	C6240-50050	Name Plate		1
43	C6240-50049	Screw		1
44	C6240-50051/1	Latex		1
45	C6240-50051/2	Cavalry		1
46	C6240-50051	Scrapper(Right)		1
47	C6240-50044	Plate		1
48	C6240-50045	Pressure Plate		1
49	C6240-50048/2	Protection Cover		1
50	C6240-50048/1	Screw		1
51	C6240-50048	Protection Block		1
52	C6240-50047/2	Cavalry		1
53	C6240-50047/1	Latex		1
54	C6240-50047	Scrapper(Right)		1
55	GH-1340A-14-03	Lamp Base		1
56	C6240-50060	Copper Pipe		2
57	C6240-50061	Oil Reservoir		2
58	C6240-50064	Cover		2
60	GB1155-89	Oil Cup	10	3
61	GB70-85	Hex Socket Cap Screw	M10 × 20	3
62	GB818-86	Screw	M6 ×16	12
63	GB79-85	Hex Socket Cap Screw	M8 × 12	1
64	GB1155-89	Oil Cup	6	1
65	GB70-85	Hex Socket Cap Screw	M6 × 35	4
66	GB118-86	Pin	5 × 50	4

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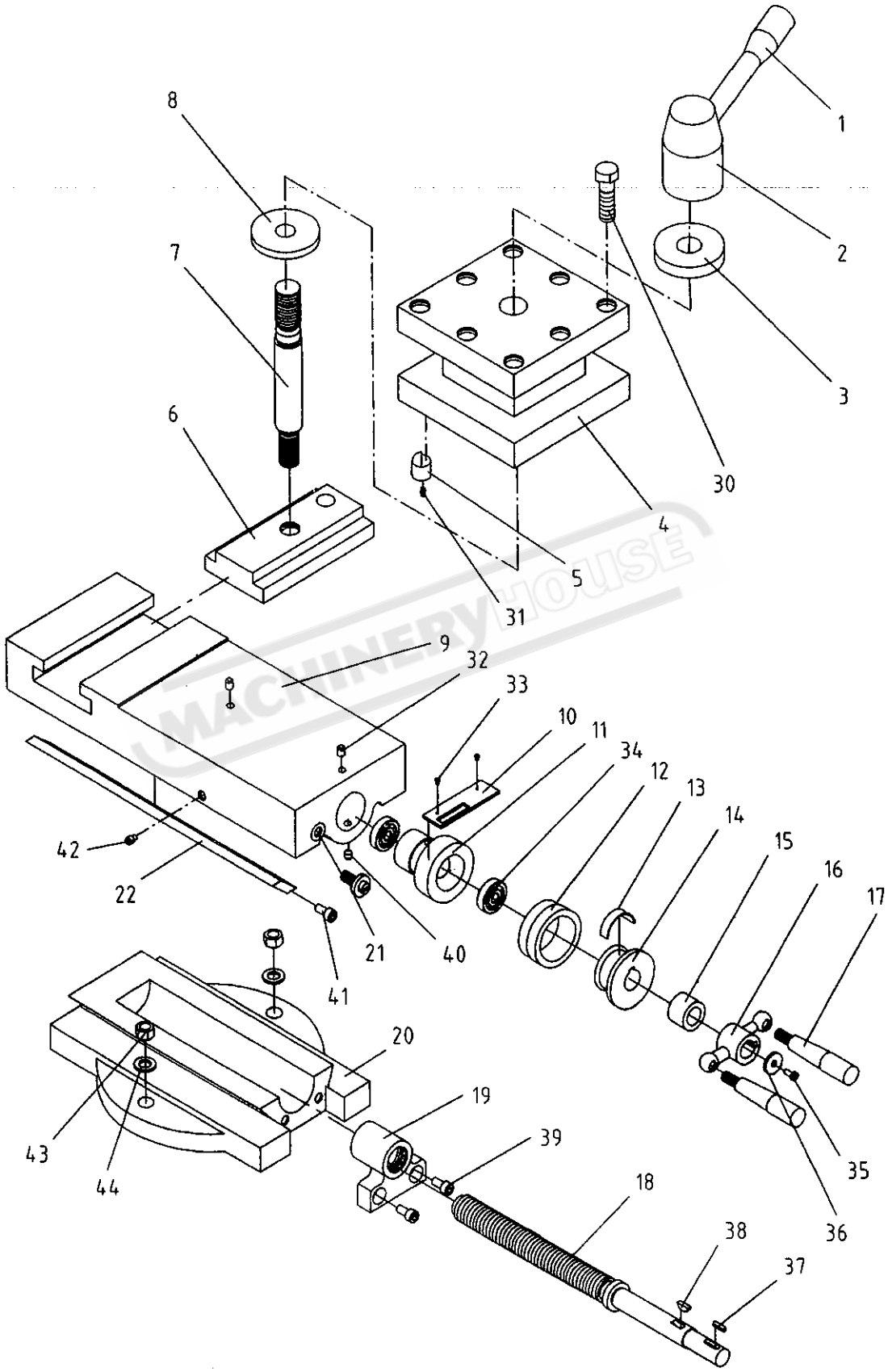
Index No.	Part No.	Description	Size	Qty.
67	GB301-95	Bearing	51103	2
68	GB812-76	Round Nut	M16×1.5	2
69	GB819-85	Screw	M5×12	1
70	GB891-86	Retaining Ring	B22	1
71	GB308-89	Steel Ball	6	1
72	GB1239.1-89	Spring	0.5×5×12	1
73	GB818-86	Screw	M3×5	2
74	GB1155-89	Oil Cup	8	1
75	GB70-85	Hex Socket Cap Screw	M8×20	4
77	GB1096-79	Key	8	1
78	GB1098-79	Half Round Key	5×16	1
79	GB118-76	Pin	8×16	2
80	GB70-85	Hex Socket Cap Screw	M12×50	4
81	GB863.2-86	Rivet	3×5	2
82	GB119-86	Pin	8×20	1
83	GB70-85	Hex Socket Cap Screw	M10×50	4
84	GB3452.9-82	Seal Ring	11.8×1.8	1
85	GB78-85	Screw	10×30	4
86	GB70-85	Hex Socket Cap Screw	M12×40	4
87	GB170-86	Nut	M10	4
88	GB70-85	Hex Socket Cap Screw	M5×16	1
89	GB70-85	Hex Socket Cap Screw	M6×16	2
90		Wool Line		
91	GB301-95	Bearing	51104	1

MACHINERY HOUSE

Fout Way Tool Post & Compound Slide Assembly



Four Way Tool Post & Compound Slide Assembly

Index No.	Part No.	Description	Size	Qty.
1	C6240-50065/2	Handle Shaft		1
2	C6240-50065/1	Handle Base		1
3	C6240-50006	Sleeve		1
4	C6240-50003	Toolpost		1
5	C6240-50023	Positioning Pin		1
6	C6240-50002	Locking Block		1
7	C6240-50005	Shaft.		1
8	C6240-50004	Washer		1
9	C6240-50008	Top Slide		1
10	C6240-50012	Name Plate		1
11	C6240-50011	Sleeve		1
	C6240-50011(Metric)	Sleeve		1
12	C6240-50013	Outer Ring Dial		1
	C6240-50013(Metric)	Outer Ring Dial		1
13	C6240-50014	Spring Leaf		1
14	C6240-50017	Innar Ring Dial		1
15	C6240-50016	Sleeve		1
16	C6240-50015	Handle Base		1
17	C6240-50018	Handle		1
18	C6240-50007	Lead Screw		1
	C6240-50007(Metric)	Lead Screw		1
19	C6240-50009	Nut		1
	C6240-50009(Metric)	Nut		1
20	C6240-50024	Tool Post Base		1
21	C6240-50025	Screw		1
22	C6240-50026	Gib		1
30	GB85-88	Square Head Screw	M16 x 50	8
31	GB1239.1-89	Spring	1 x 7 x 12	1
32	GB1155-89	Oil Cup	6	2
33	GB818-86	Screw	M3 x 5	2
34	GB301-95	Bearing	51103	2
35	GB819-85	Screw	M5 x 12	1
36	GB891-86	Retaining Ring	B22	1
37	GB1096-79	Key	5 x 10	1

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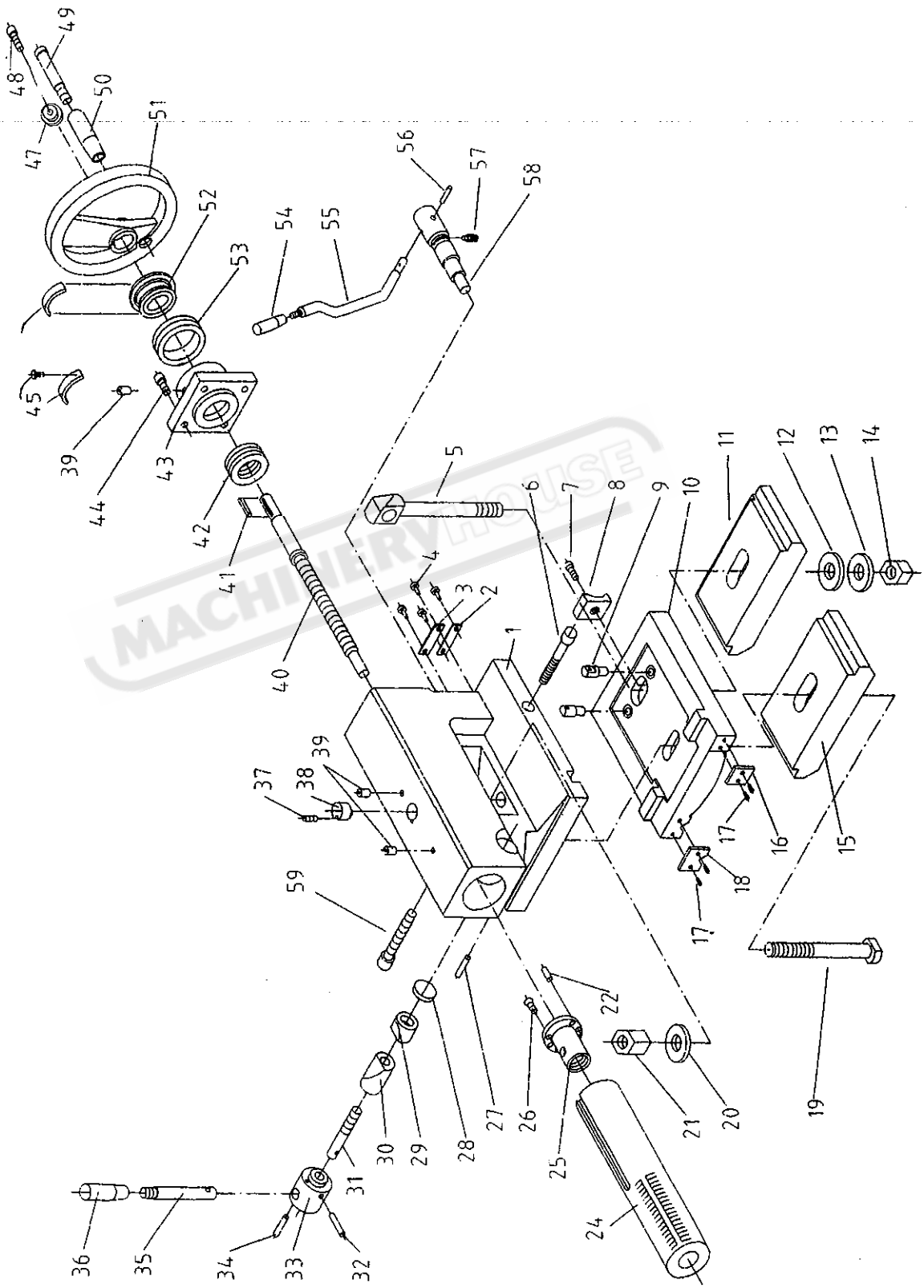
Index No.	Part No.	Description	Size	Qty.
38	GB1098-79	Half Round Key	5 × 16	1
39	GB79-85	Hex Socket Cap Screw	M8 × 16	2
40	GB78-85	Hex Socket Cap Screw	M8 × 10	1
41	GB70-85	Hex Socket Cap Screw	M8 × 30	1
42	GB79-85	Hex Socket Cap Screw	M8 × 12	1
43	GB6170-85	Nut	M12	2
44	GB95-85	Washer	M12	2

MACHINERYHOUSE

Tailstock Assembly



Tailstock Assmbly

Index No.	Part No.	Description	Size	Qty.
1	C6240-60001	Tailstock Body		1
2	GH-1340A-08-23	Name Plate		1
3	GH-1340A-08-22	Name Plate		1
4	GB818-85	Screw	M3 x 5	6
5	C6136B-6020	Compression Screw		1
6	C6136B-6015	Hex Socket Cap Screw		1
7	GB70-85	Hex Socket Captew	M8 x 40	1
8	C6136B-6019	Slash Poard		1
9	C6136B-6014	Tool Post PIN.		2
10	C6136B-6024	Tail stock Bsse		1
11	C6136B-6018	Tail stock Clamp Plate		1
12	GB850-76	Washer	20	1
13	GB849-76	Washer	20	1
14	GB6170-86	Nut	M20	1
15	C6136B-6023	Tail stock Clamp Plate		1
16	C6136B-6025	Scrapper		1
17	GB818-85	Screw	5 x 12	4
18	C6136B-6026	Scrapper		1
19	C6145W-60017	Hex Cap Bolt		1
20	GB97.1-85	Washer	20	1
21	GB56-88	Nut	M20	1
22	GB117-86	Taper Pin	4 x 20	1
24	C6240-60002	Bushing		1
25	C6240-60005	Nut		1
26	GB68-85	Screw	M6 x 16	1
27	GB119-86	Pin	5 x 20	1
28	C6240-60022	Cover		1
29	C6240-60023	Short Compression Sleeve		1
30	C6240-60025	Long Compression		1
31	C6240-60024	Screw Rod		1
32	GB117-86	Taper Pin	5 x 50	1
33	C6240-60026	Lever Base		1
34	GB117-86	Taper Pin	4 x 30	1

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Tailstock Assmbly

Index No.	Part No.	Description	Size	Qty.
35	C6240-60028	Handle		1
36	GB4141.14-84	Knob	BM10 × 50	1
37	GB71-85	Screw	M6 × 8	2
38	C6240-60004	Key		1
39	GB1155-89	Oiler	6	3
40	C6240-60003	Screw		1
41	GB1096-79	Key	6 × 36	1
42	GB/T301-95	Bearing	51205	1
43	C6240-60006	Facep late		1
44	GB70-85	Hex Socket Cap Screw	M8 × 20	4
45	C6240-60007	Name Plate		1
46	C6240-60009	Spring Leaf		1
47	C6240-60012	Retainer Ring		1
48	GB818-85	Screw	M8 × 14	1
49	C6240-60013-1	Handle Rod		1
50	C6240-60013-2	Handle Sleeve		1
51	C6240-60011	Handle Wheel		1
52	C6240-60010	Inner Ring		1
53	C6240-60008	Dial Ring		1
54	GB4141.14-84	Knob	M12 × 60	1
55	C6136B-6007	Handle		1
56	GB117-86	Taper Pin	5 × 35	1
57	GB75-85	Screw	M8 × 12	1
58	C6136B-6021	Push Rod		1
59	GB70-85	Hex Socket Cap Screw	M12 × 90	1

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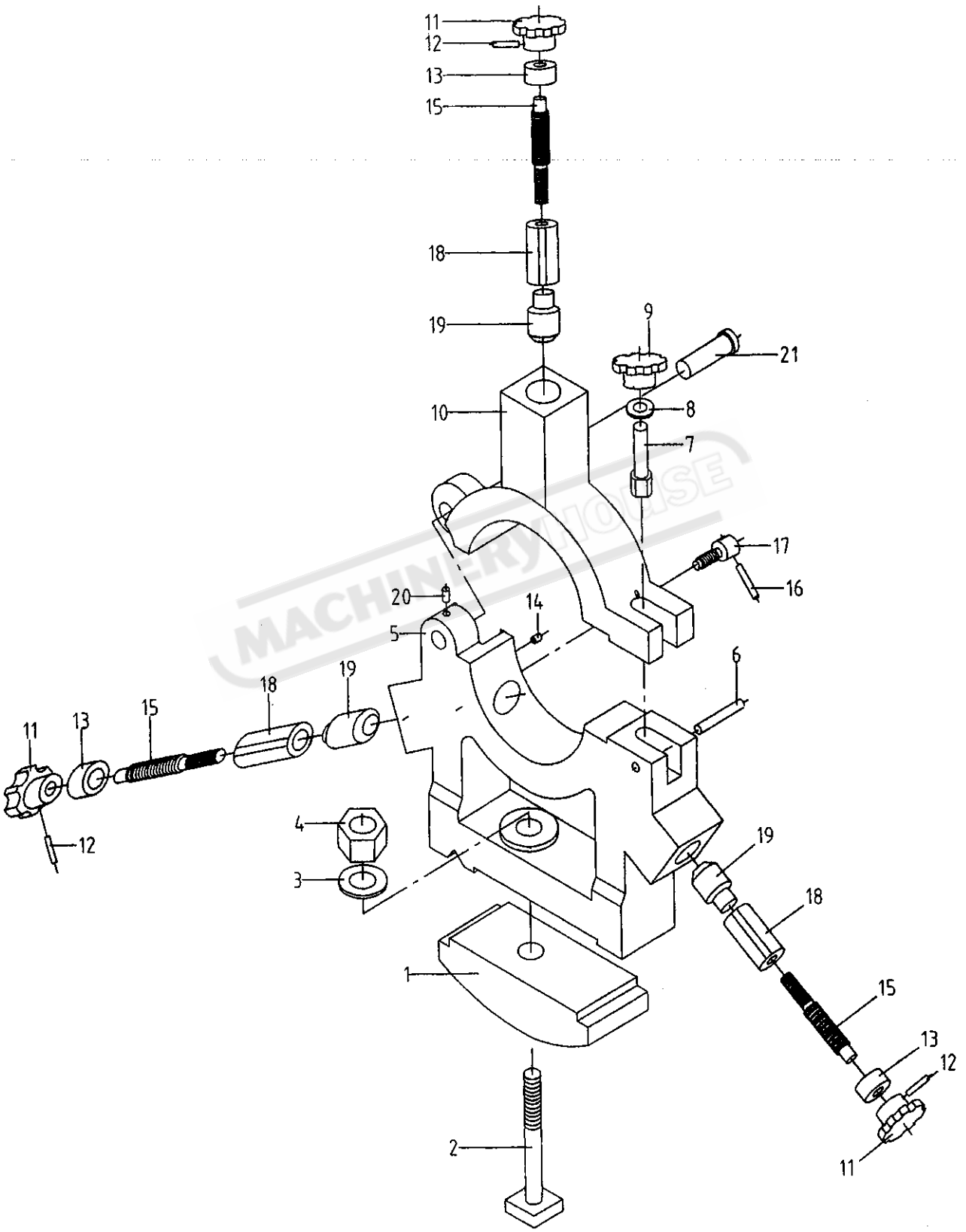
Steady Rest Assebmly

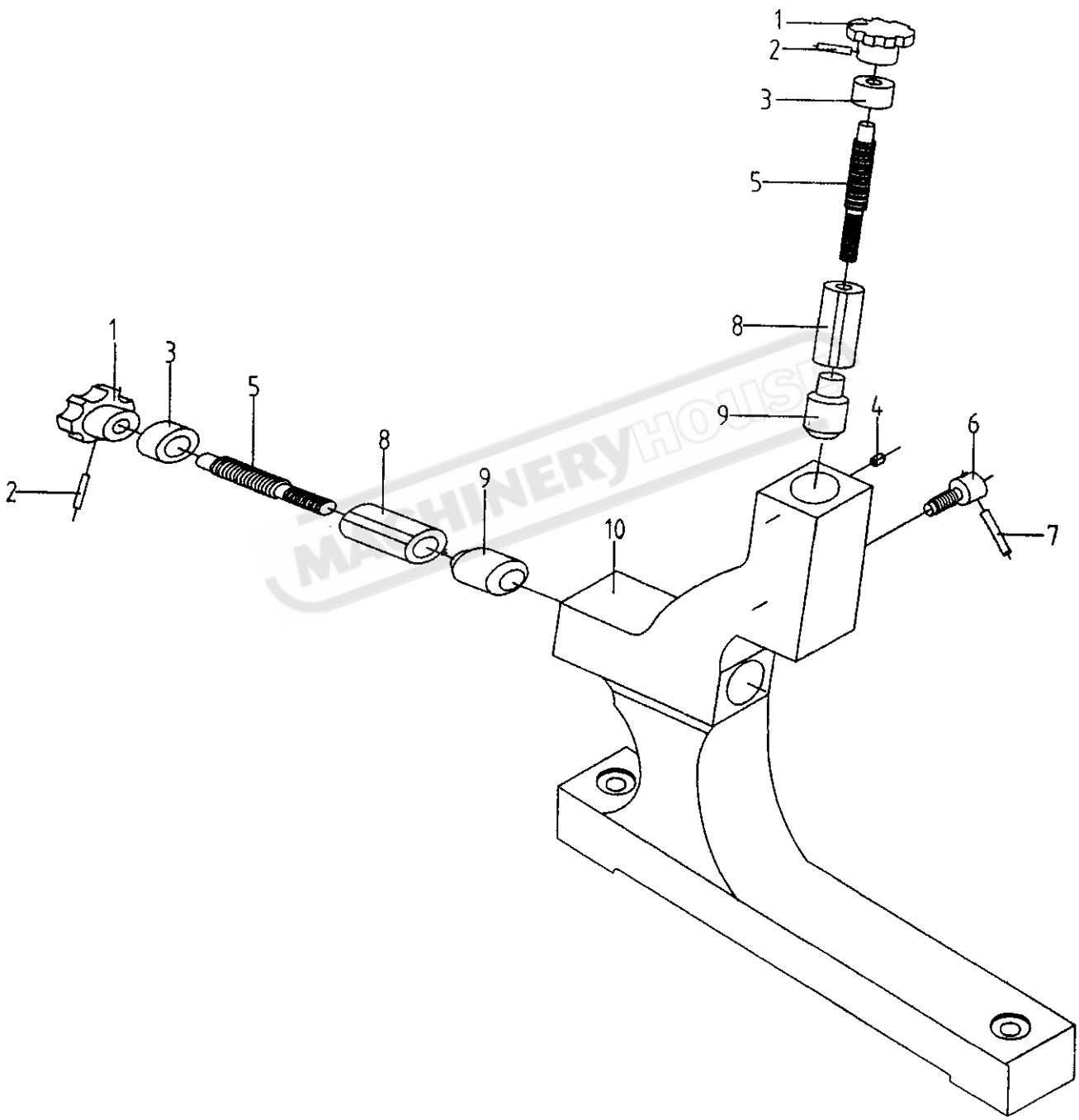


Steady Rest Assembly

Index No.	Part No.	Description	Size	Qty.
1	C6240-70001	Pressure Plate		1
2	C6240-70002	Screw Rod		1
3	GB97.1-85	Washer	20	1
4	GB56-88	Nut	M20	1
5	C6240-70003	Lower Body		1
6	GB119-86	Pin	8× 50	1
7	C6240-70004	Screw Rod		1
8	GB97.1-85	Washer	12	1
9	GB4141.29B	Radial grip	M12× 50	1
10	C6240-70005	Upper Body		1
11	GB4141.29A	Radial grip	12× 50	3
12	GB119-86	Pin	6× 30	3
13	C6240-70006	Nut		3
14	GB71-85	Screw	M8× 12	3
15	C6240-70007	Screw Rod		3
16	GB119-86	Pin	6× 40	3
17	C6240-70008	Stop Rod		3
18	C6240-70009	Slide Sleeve		3
19	C6240-70010	Push Head		3
20	GB71-85	Screw	M6× 12	1
21	C6240-70011	Shaft		1

MACHINERYHOUSE

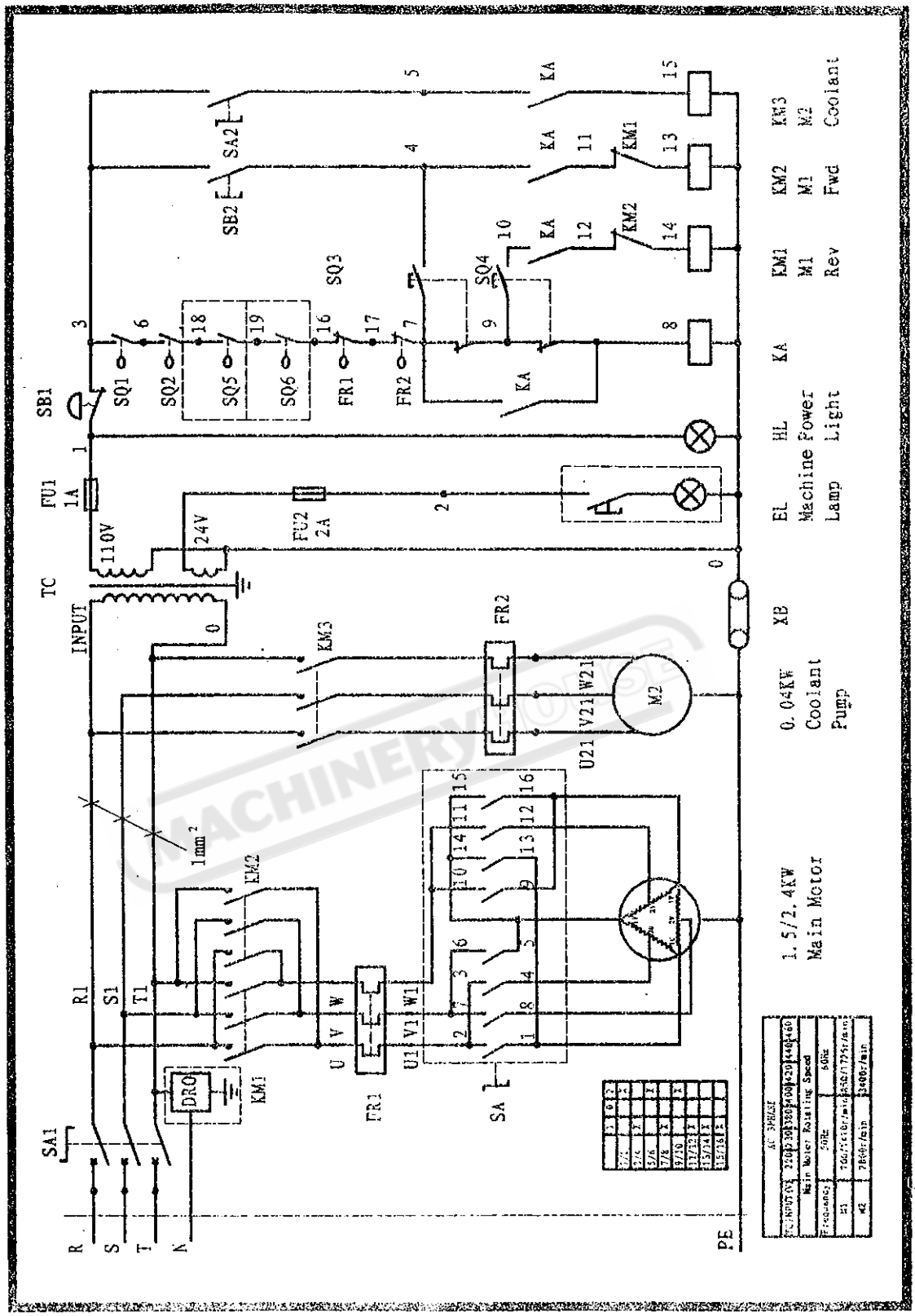
Follow Rest Assembly



Follow Rest Assembly

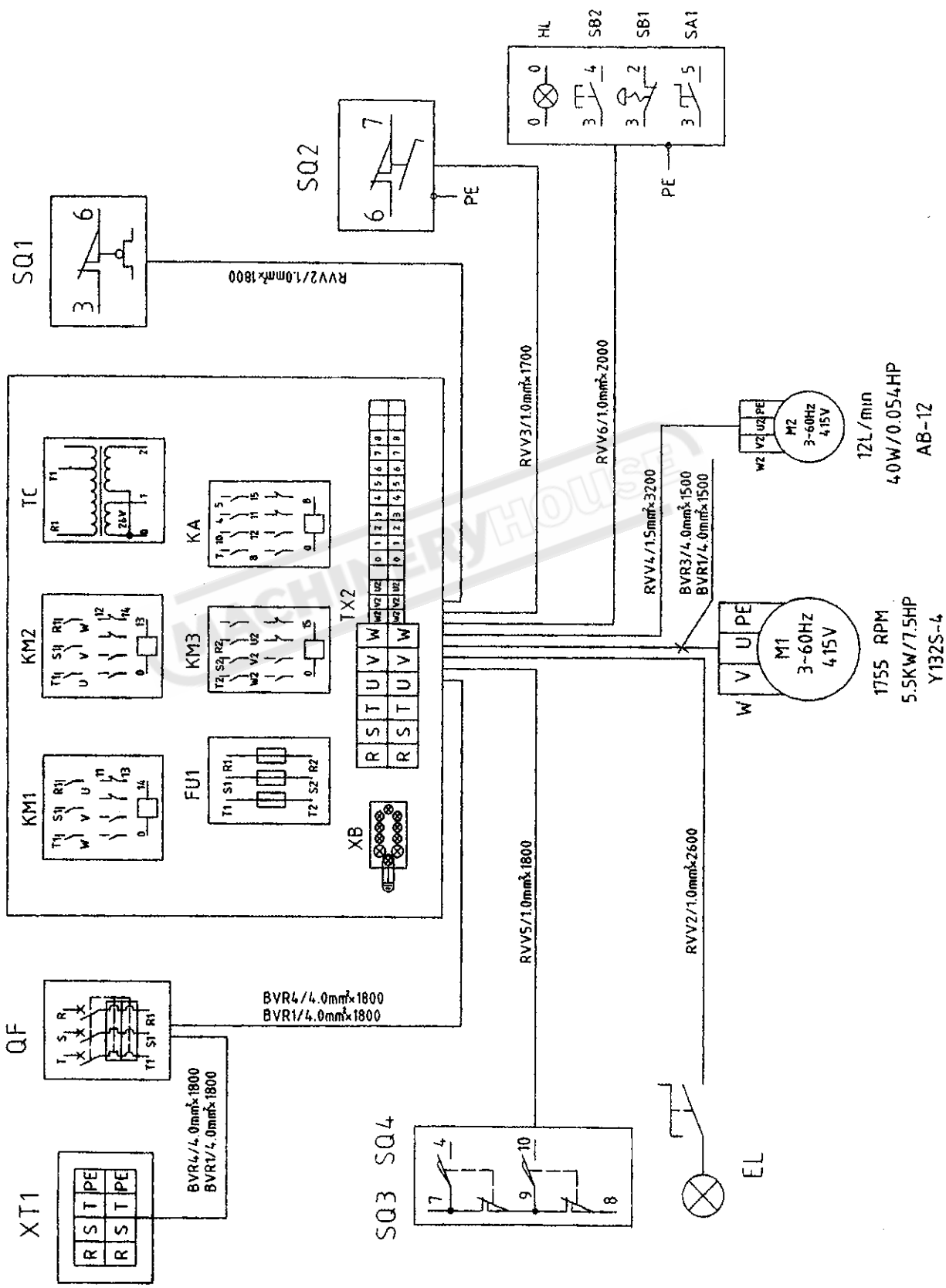
Index No.	Part No.	Description	Size	Qty.
1	GB4141.29A	Radial grip	12 × 50	2
2	GB119-76	Pin	6 × 30	2
3	C6240-70006	Nut		2
4	GB71-85	Screw	M8 ×10	2
5	C6240-70007	Screw Rod		2
6	C6240-70008	Stop Rod		2
7	GB119-76	Pin	6 ×40	2
8	C6240-70009	Slide Sleeve		2
9	C6240-70010	Push Head		2
10	C6240-80001	Body		1

MACHINERYHOUSE

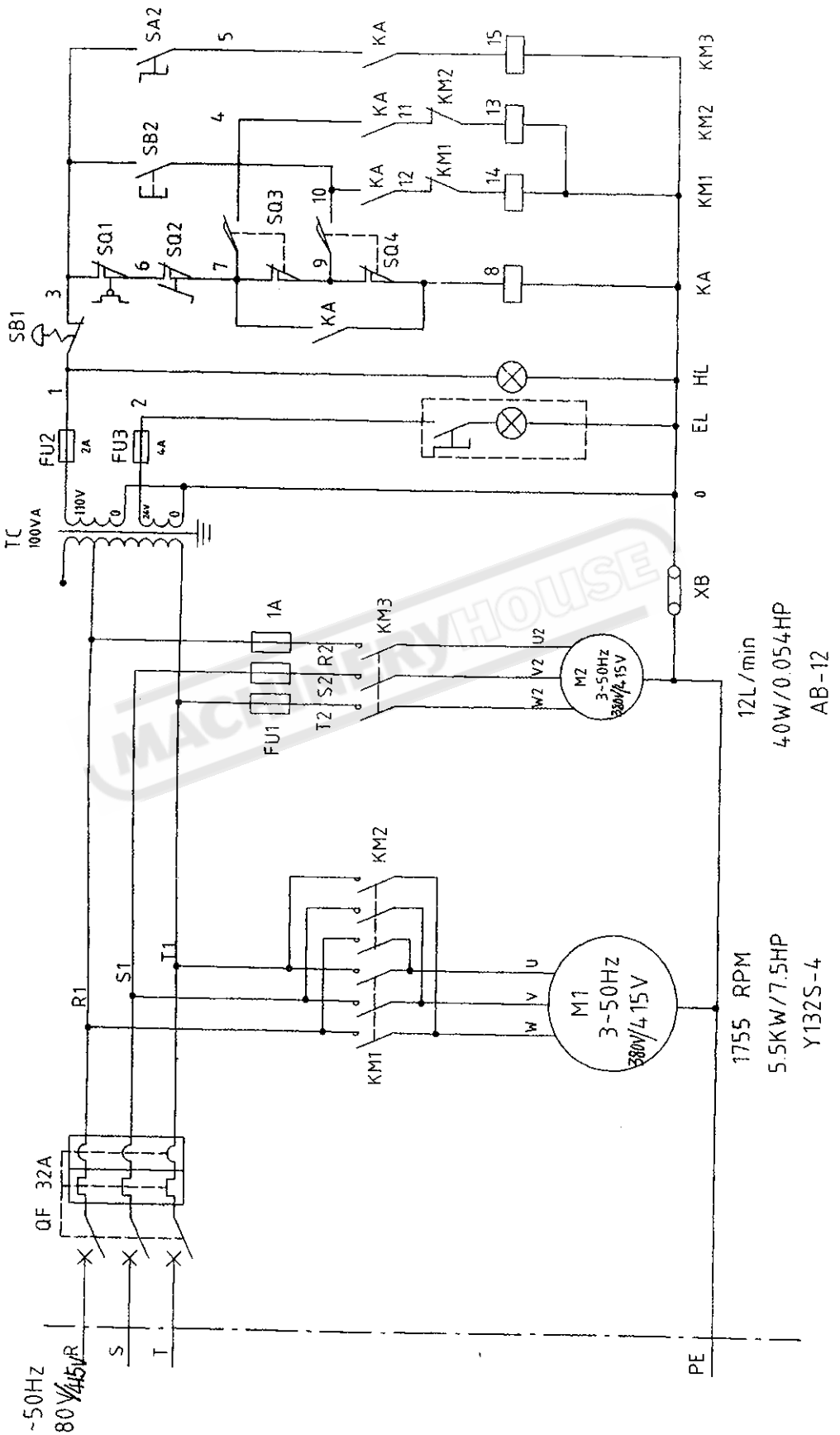

SA2
SB2
SQ3
SQ4
KA
KM1
KM2
KM3
SB1
SQ1
SQ2
SQ5
SQ6
FR1
FR2
FU1
1A
FU2
2A
110V
24V
TC
INPUT
EL
HL
Machine Power
Lamp Light
XB
0.04KW
Coolant Pump
M2
1.5/2.4KW
Main Motor
SA1
SA
KM3
KM2
KM1
FR2
FR1
R1
S1
T1
1mm²
R
S
T
N
PE

(A2)

Electric Panel Schematic



Wiring Diagram



Electric Panel Schematic