

## ⚠ WARNING

Read and understand the entire contents of this manual before attempting set-up or operation!

Failure to comply may cause serious injury!

### Contents of the Shipping Container

- 1 Lathe
- 1 Steady Rest
- 1 Follow Rest
- 1 6" Three Jaw Chuck w/ Top Reversing Jaws (Direct Mount)
- 1 8" Four Jaw Chuck
- 1 12" Face Plate (strapped to container floor)
- 1 Tool Box
- 1 Halogen machine light
- 1 Splash guard      1 Coolant system      1 Threading dial
- 1 Pull out chip tray      1 Protection for chuck
- 1 Protection for lead screw

### Tool Box Contents:

- 1 6" Cross Point Screwdriver
- 1 6" Flat Blade Screwdriver
- 4 Open End Wrench  
(9-11, 10-12, 12-14, 17-19mm)
- 6 Hex Socket Wrench (2.5, 3, 4, 5, 6, 8mm)
- 2 Shear Pin
- 1 30T Change Gear
- 1 32T Change Gear
- 2 40T Change Gear
- 1 Oil Gun
- 2 No. 3 Morse Taper Dead Center
- 1 No. 5 to No. 3 Spindle Sleeve
- 6 Leveling Pads
- 1 Chuck Key
- 1 Key for Cam Locks
- 1 Tool Post Wrench

### 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. Place two steel rods or pipes (of sufficient strength) into four holes ( ) of lathe stand. Sling the lathe with properly rated straps. Do not lift by spindle. With adequate lifting equipment, 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 included in the tool box and the leveling screws in the lathe base will help you to reach a level condition. The lathe must be level to be accurate.
6. Clean all rust protected surfaces using a mild commercial solvent, kerosene or diesel fuel. Do not use paint thinner, gasoline, or lacquer thinner. These will damage painted surfaces. Cover all cleaned surfaces with a light film of mobil DTE® Oil Heavy Medium.
7. Open the end gear door. Clean all components of the end gear assembly and coat all gears with Mobilith®AW.1 Close the door.



## Chuck Preparation (Three Jaw)

### WARNING

Read and understand all directions for chuck preparation!

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

Note: Before removing the chuck from the spindle, place a way board across the bedways under the chuck

1. Support the chuck while turning three camlocks 1/4 turn counter-clockwise with the chuck 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 Mobilith® AW2. Cover the spindle, cam locks, and chuck body with a light film of Mobil DTE® Oil Heavy Medium.
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 (A, Fig. 3) on the camlock should be between the two indicator arrows (B, Fig. 3). 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.

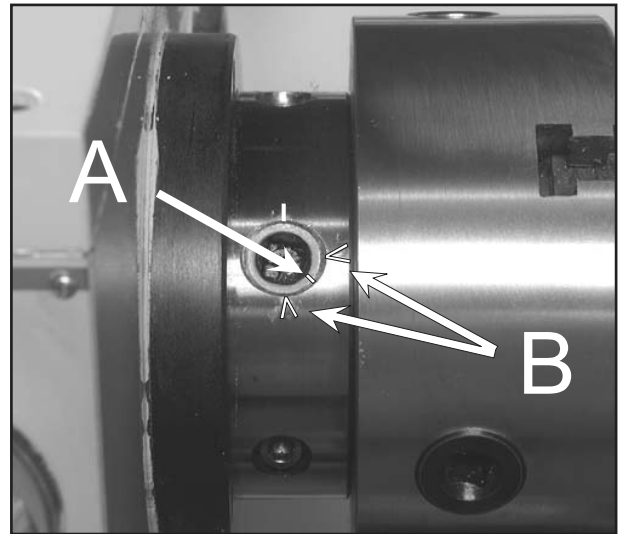


Fig. 2

## Lubrication

### ⚠ CAUTION

Lathe must be serviced at all lubrication points and all reservoirs filled to operating level before the lathe is put into service!

Failure to comply may cause serious damage to the lathe!

1. Headstock - Oil must be up to indicator mark in oil sight glass (A, Fig. 3). Top off with Mobil DTE® Oil Heavy Medium. Fill by pulling plug (D, Fig. 3). To drain, remove drain plug (A, Fig. 4) with an 8mm hex wrench. Drain oil completely and refill after the first month of operation. Clean out any metal shavings. Then, change oil in the headstock annually.

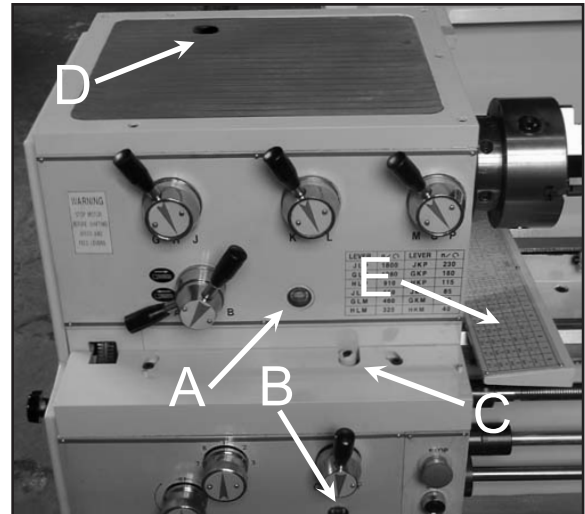


Fig. 3

2. Gearbox - Oil must be up to indicator mark in oil sight glass (B, Fig. 3). Top off with Mobil DTE® Oil Heavy Medium. Fill by lifting off thread chart cover (E, Fig. 3) and remove plug (C, Fig. 3) with an 8mm hex wrench. To drain, remove drain plug (A, Fig. 5) with an 8mm hex wrench. Drain oil completely and refill after the first month of operation. Then, change oil in the Gearbox annually.

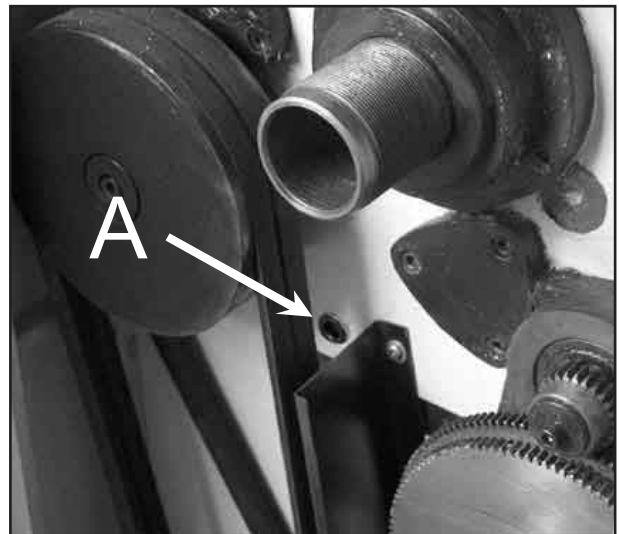


Fig. 4

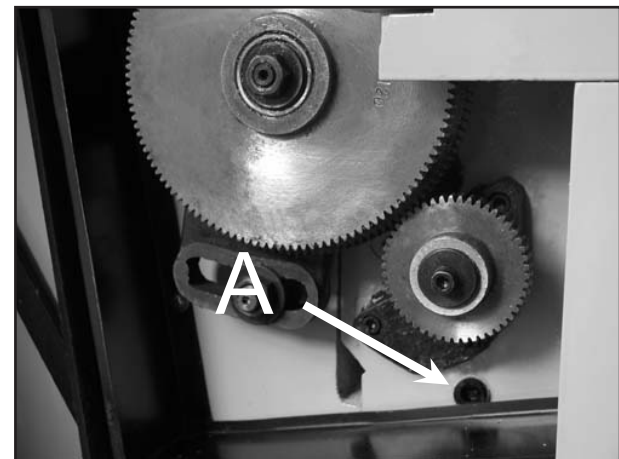


Fig. 5

Apron - oil must be up to indicator mark in oil sight glass (A, Fig. 6). Top off with Mobil DTE® Oil Heavy Medium. Remove oil cap (B, Fig. 6) on top of apron to fill. To drain, remove drain plug on bottom of apron. Drain oil completely and refill after the first month of operation. Then, change oil in the apron annually.

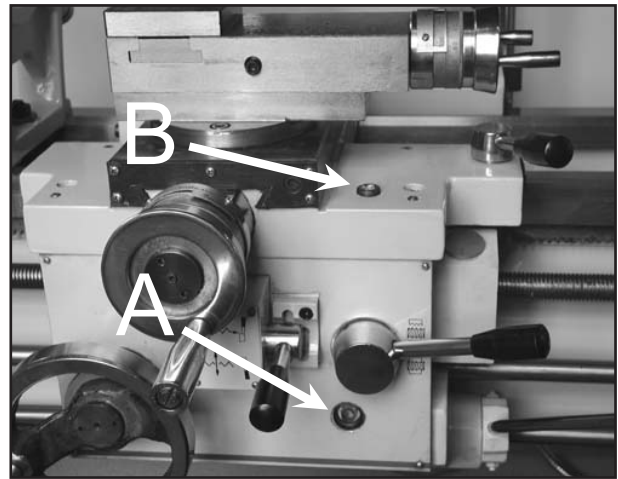


Fig 6

3. Leadscrew Feed Rod - lubricate ball oiler (A, Fig. 7) on leadscrew/feed rod bracket with Mobil DTE® Oil Heavy Medium once daily.

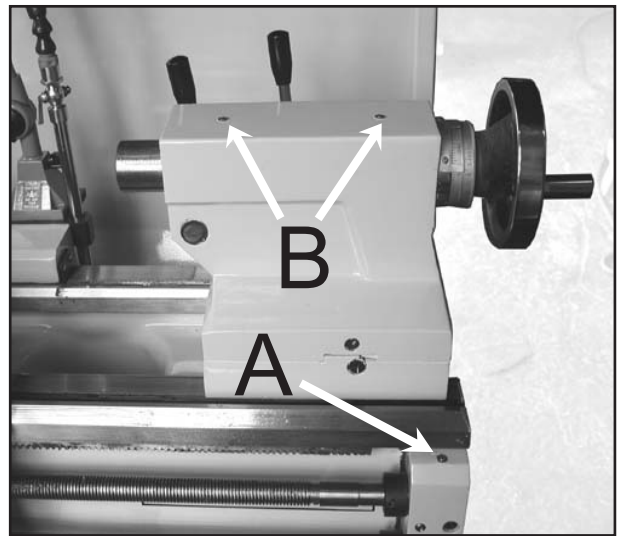


Fig. 7

4. Tailstock - lubricate two ball oilers (B, Fig. 7) on tailstock with Mobil DTE® Oil Heavy Medium once daily.

5. Cross Slide - lubricate four ball oilers (A, Fig. 8) with Mobil DTE® Oil Heavy Medium once daily.

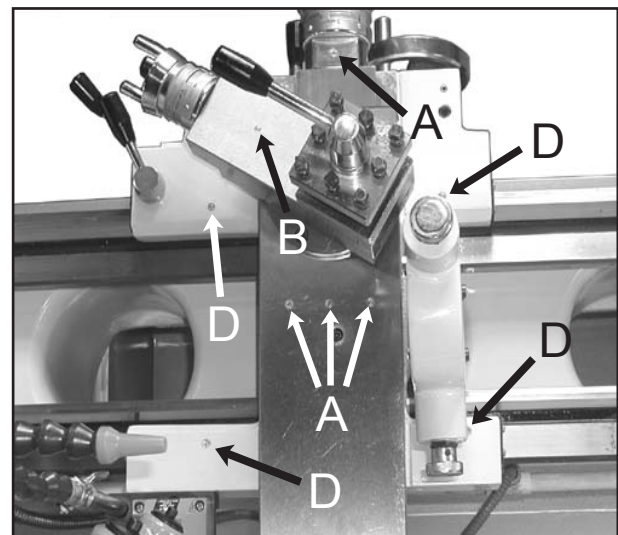


Fig. 8

6. Compound Rest - lubricate one ball oiler (B, Fig. 8) with Mobil DTE® Oil Heavy Medium once daily.

7. Carriage - lubricate four ball oilers (D, Fig. 8) with Mobil DTE® Oil Heavy Medium once daily.

## Coolant Preparation

### CAUTION

Follow coolant manufacturer's recommendations for use, care, and disposal.

1. Remove rear access cover on tailstock end. Make sure coolant tank has not shifted during transport and is located properly under the recovery chute (Fig. 9).
2. Pour three gallons of coolant mix into drip pan.
3. After machine has been connected to power, turn on coolant pump and check to see coolant is cycling properly.
4. Fasten coolant door to stand.



Fig. 9

## Electrical Connections

### WARNING

All electrical connections must be completed by a qualified electrician!

Failure to comply may cause serious injury and / or damage to the machinery and property!

The GH-1340W-1 & GH-1440W-1 Gear Head Lathes are rated at 3HP, 1Ph, 230V only. Confirm power available at the lathe's location is the same rating as the lathe.

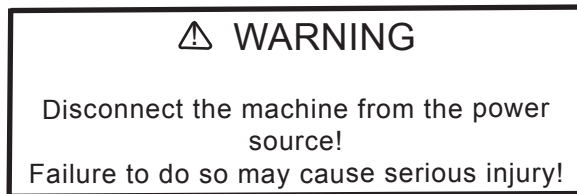
The GH-1340W-3 & GH-1440W-3 Gear Head Lathes are rated at 3HP, 3Ph, 230V/460V prewired 230V. Confirm power available at the lathe's location is the same rating as the lathe.

**Lathe Power Source Junction Box:**  
Remove the cover. Run the main power through the strain relief bushing and attach the ground, followed by power leads. Replace the cover.

**Main Power Switch:** Located on the backside of the machine. Turns the power to the machine on and off.

Make sure the lathe is properly grounded.

Power is connected properly when pulling up on the forward-reverse lever causes the spindle to rotate counter-clockwise as viewed from the tailstock. If the chuck rotates in the clockwise direction, disconnect the lathe from the power source, switch two of three power leads (for GH-1340W-3 & GH1440W-3), and connect the lathe to the power source.



Main Motor: Change the wires according to the diagram on the inside of the motor junction box.

Transformer: Remove electrical panel on rear of the machine, headstock side, switch wire from 230V terminal as outlined on the transformer.

Coolant Pump: Open access panel on the base at the tailstock end. Change wires in coolant pump junction box according to diagram on the inside of the junction box cover.



## General Description

### Lathe Bed

The lathe bed (A, Fig. 10) is made of high grade cast iron. By combining high cheeks with strong cross 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 stand below headstock.

### Headstock

The headstock (B, Fig. 10) 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 two precision taper roller bearings. The hollow spindle has Morse Taper #5 with a 1-1/2" bore.

### Carriage

The carriage (A, Fig. 11) 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 slide which can be adjusted for play by means of the gibs.

The compound slide (B, Fig. 11), which is mounted on the cross slide (C, Fig. 11), 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 toolpost (D, Fig. 11) 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 (E, Fig. 11) is mounted to the carriage. In the apron a half nut is fitted. 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 accomplished by means of a bed mounted rack and pinion, operated by a hand wheel on the front of the apron.

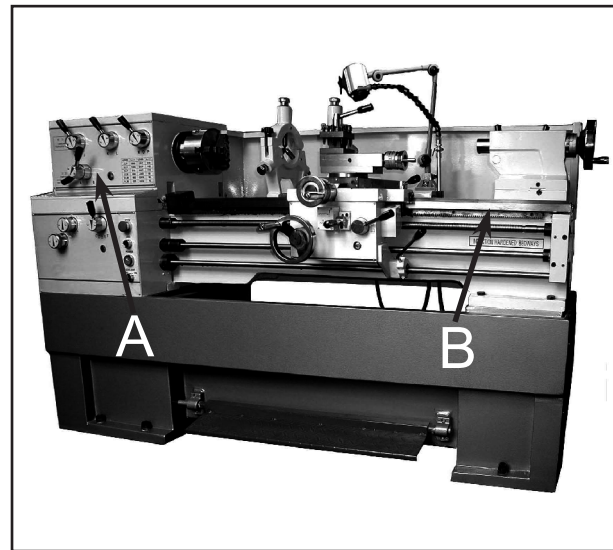


Fig. 10

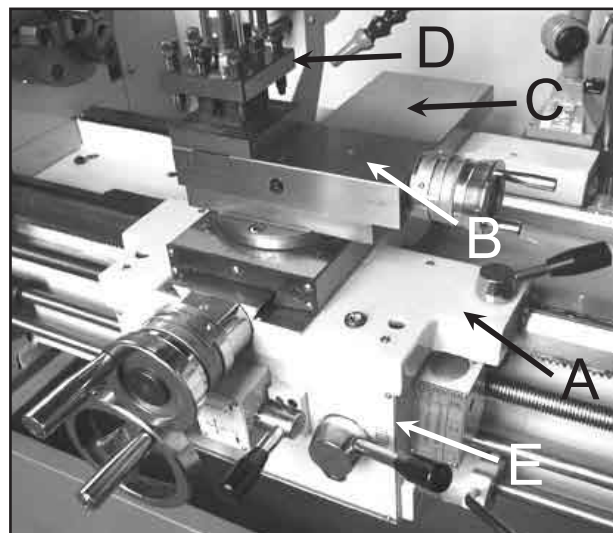


Fig .11

## Tailstock

The tailstock (A, Fig. 12) 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 #3.

## Leadscrew and Feed Rod

The leadscrew (B Fig. 12) and feed rod (C, Fig. 12) 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 supported by bushings on both ends. Both are equipped with brass shear pins.

## Gear Box

The gear box (D, Fig. 12) is made from high quality cast iron and is mounted to the left side of the machine bed.

## Steady Rest

The steady rest (E, Fig. 12) 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 workpiece to prevent premature wear. To set the steady rest:

1. Loosen three hex socket 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 overly tight. Lubricate sliding points with Mobil DTE® Oil Heavy Medium.
4. After prolonged use, the fingers will show wear. Remill or file the tips of the fingers.



## Follow Rest

The traveling follow rest (F, Fig. 12) 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 tuning 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 with Mobil DTE<sup>®</sup> Oil Heavy Medium.

## Controls

1. Control Panel - located on front of gearbox.
  - A. Coolant On- Off Switch (A, Fig. 13) - turns coolant pump on and off.
  - B. Power Indicator Light (B, Fig. 13) - lit whenever lathe has power.
  - C. Emergency Stop Switch (C, Fig. 13) - depress to stop all machine functions.  
  
Caution: lathe will still have power. Twist to re-set.
  - D. Jog Switch (D, Fig. 13) - depress and release to advance spindle momentarily.
2. Headstock Gear Change Levers (E, Fig. 13) - located on front of the headstock. Move levers according to speed chart for desired setting.
3. Leadscrew/Feed Rod Directional Lever (F, Fig. 13) - located on front of headstock. Moving the lever up causes carriage travel toward the tailstock. Moving the lever down causes carriage travel toward the headstock. When chuck is spinning in the forward or counter-clockwise direction. Do not move lever while machine is running.
4. Feed/Lead Selector Lever (G, Fig. 13) - located on the front of the headstock. Used whenever setting up for threading or feeding.

Caution: in the "A" position, never run the lathe higher than 650 RPM.

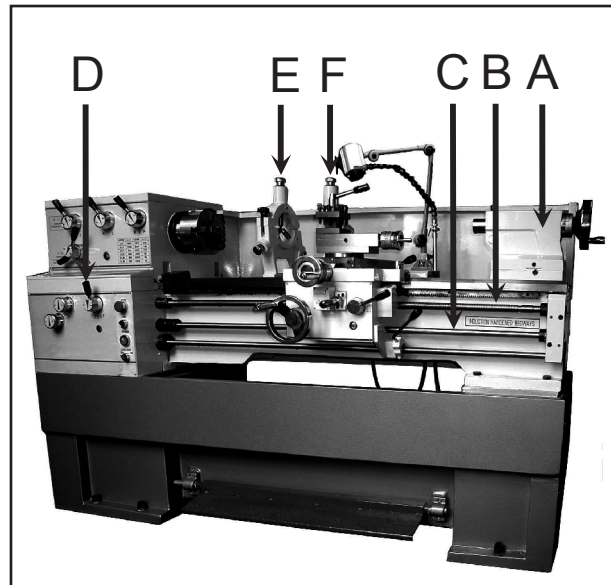


Fig. 12

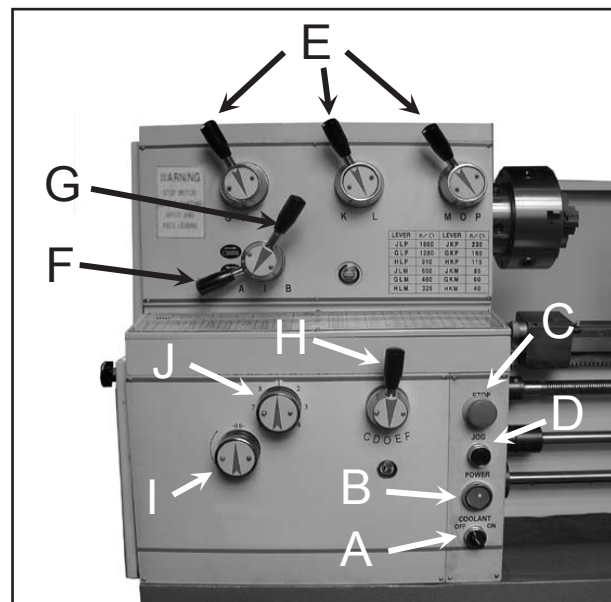


Fig. 13

5. Feed/Lead Selector Lever (H, Fig. 13) - located on the front of the gearbox. Used in setting up for feeding and threading. Positions "F" and "D" are for the feed rod. Positions "E" and "C" are for the feed screw. Position "0" is neutral.
6. Lock Knob (I, Fig. 13) - located on the front of the gearbox. With the knob in the six o'clock position, feed/lead selector knob (J, Fig. 13) may be adjusted. With the knob in the twelve o'clock position, the feed/lead selector knob (J, Fig. 13) is locked.
7. Feed/Lead Selector Knob (J, Fig. 13) - located on front of the gearbox. Used for setting up for feeding and threading.
8. Compound Lock (A, Fig. 14) - hex socket screw located on left side of compound. Turn clockwise to lock and counter-clockwise to unlock.
9. Carriage Lock (B, Fig. 14) - lock handle located on top of carriage. Turn clockwise to lock. Turn counter-clockwise to unlock.

Caution: carriage lock must be unlocked before engaging automatic feeds or damage to lathe may occur.

10. Longitudinal Traverse Hand Wheel - (D, Fig. 14) - located on the apron assembly. Rotate hand wheel clockwise to move the apron assembly toward the tailstock. Rotate the wheel counter-clockwise to move the apron assembly toward the headstock.
11. Feed Selector (E, Fig. 14) - located in the center front of the apron assembly. Pushing lever to the left and down activates the crossfeed function. Pulling lever to the right and up activates the longitudinal function.
12. Half Nut Engage Lever (thread cutting) (F, Fig. 14) - located on front of the apron. Move the lever down to engage. Move the lever up to disengage.
13. Cross Traverse Handwheel (G, Fig. 14) - located above the apron assembly. Rotate clockwise or counter-clockwise to move, or position.
14. Compound Rest Traverse Handwheel (H, Fig. 14) - located on the end of the compound slide. Rotate clockwise or counter-clockwise to move, or position.

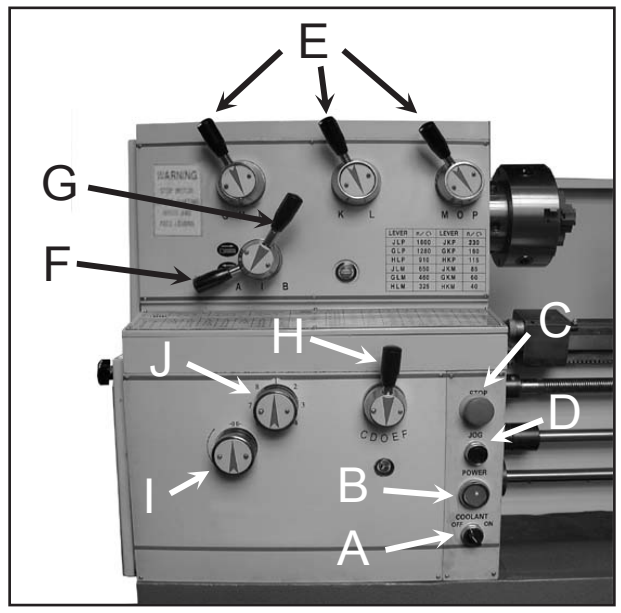


Fig. 13

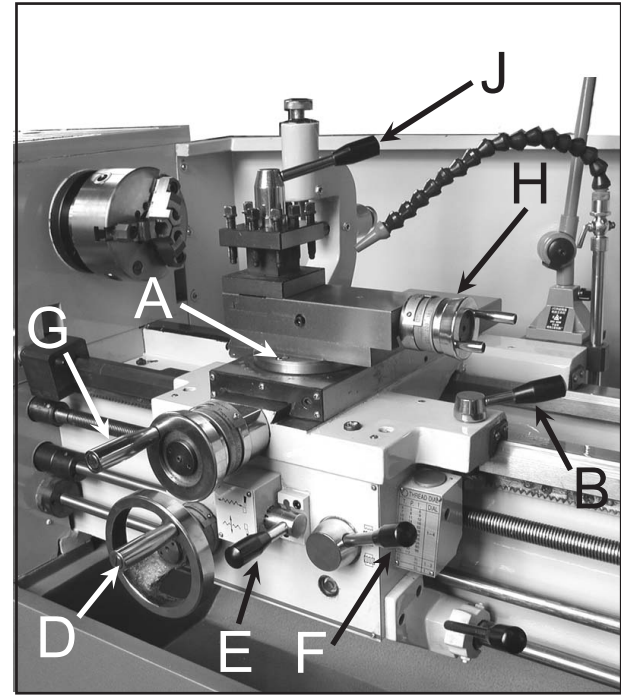


Fig. 14

15. Tool Post Clamping Lever (J, Fig. 14) - located on top of the tool post. Rotate counter-clockwise to loosen and clockwise to tighten.
16. Tailstock Quill Clamping Lever (A, Fig. 15) - located on the tailstock. Lift up to lock the spindle. Push down to unlock.
17. Tailstock Clamping Lever (B, Fig. 15) - located on the tailstock. Lift up lever to lock. Push down lever to unlock.
18. Tailstock Quill Traverse Handwheel (C, Fig. 15) - located on the tailstock. Rotate clockwise to advance the quill. Rotate counter-clockwise to retract the quill.

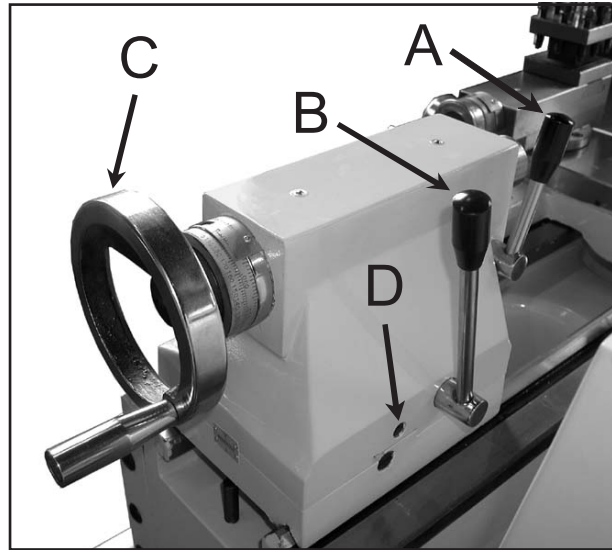


Fig. 15

19. Tailstock Off-Set Adjustment (D, Fig. 15) - two hex socket cap screws located on the tailstock base are used to off-set the tailstock for cutting tapers. Loosening one screw while tightening the other off sets the tailstock.
20. Foot Brake (A, Fig. 16) - located between stand pedestals. Depress to stop all lathe functions.
21. Micro Carriage Stop (B, Fig. 16) - located on the lathe bed. Loosen two hex socket cap screws underneath body and slide along bed to desired position. Tighten screws to hold in place.
22. Main Power Switch (not shown) - located on the electrical box door on the rear of the lathe. Turns main power to the lathe on and off.

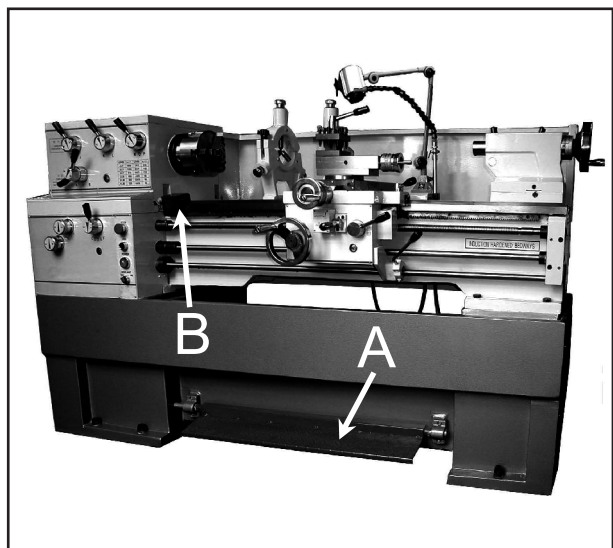


Fig. 16

### Break-In Procedure

During manufacture and testing, this lathe has been operated in the low R.P.M. range for three hours.

To allow time for the gears and bearings to break-in and run smoothly, do not run the lathe above 650 R.P.M. for the first six hours of operation and use.

## Operation

### Feed and Thread Selection

1. Reference the feed and thread found on the gear box faceplate tables (A, Fig. 17 & page 22 of manual).
2. Move levers (B, C, D, E & F, Fig. 17) to the appropriate positions according to the chart.

### Change Gears Replacement

The 25T, 127T, 50T gears are installed in the end gear compartment when delivered from the factory. This combination will cover most inch feeds and threads under normal circumstances.

The 30T, 32T, and two 40T gears found in the tool box are used with different combinations as indicated on feed and thread tables (A, Fig. 17).

1. Disconnect the machine from the power source (unplug).
2. Open the door on the left end of the headstock.
3. Loosen nuts (A & B, Fig. 18).
4. Move quadrant (C, Fig. 18) out of the way and hold in place temporarily by tightening nut (A & B, Fig. 18).
5. Remove hex socket cap screws (D and/or E, Fig. 18), depending on which gear is to be changed.
6. Install new gear(s) and tighten in place with a hex socket cap screw.
7. Loosen nut (B, Fig. 18), move quadrant back so teeth mesh on gears, and tighten nuts (A & B, Fig. 18).

Caution: Make sure there is a backlash of .002"-.003" between gears. Setting the gears too tight will cause excessive noise and wear.

8. Close the door and connect the machine to the power source.

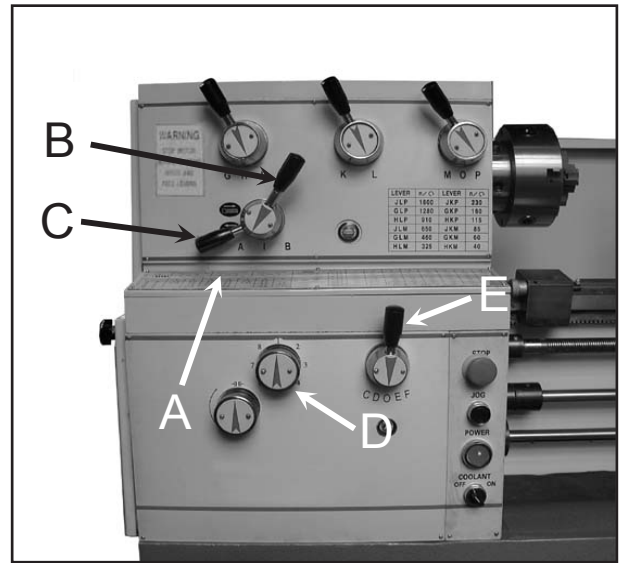


Fig. 17

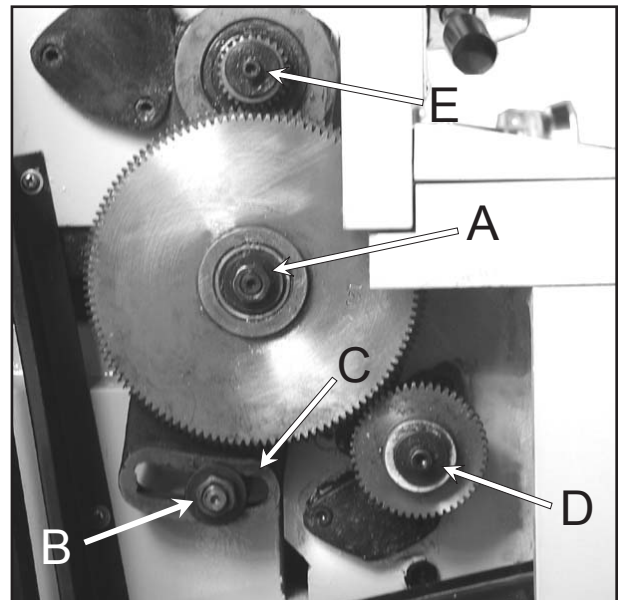


Fig. 18



## Automatic Feed Operation and Feed Changes

1. Move the forward/reverse selector (A, Fig. 19) up or down depending on desired direction.
2. Set selector levers (A, B, C, & D, Fig. 20) to desired rate.

Note: for feeding, lever (D) will be set at "F" or "D", depending on desired feed rate.

## Powered Carriage Travel

1. Push lever (B, Fig. 19) to the left and down to engage crossfeed.
2. Pull lever to the right and up to engage longitudinal feed.

## Thread Cutting

1. Set forward/reverse lever (A, Fig. 19) up or down depending on the desired direction.
2. Set selector levers (A, B, C, and D, Fig. 20) to desired rate.

Note: for threading, lever (D) will be set at "C" or "E", depending on desired thread.

3. Push lever (B, Fig. 19) to the right.
4. Engage the half nut lever (C, Fig. 19).
5. To cut inch threads, reference the feed and thread tables. The half nut lever and the threading dial are used to thread in the conventional manner. The thread dial chart specifies at which point a thread can be entered using the threading dial.
6. To cut metric threads, the half nuts must be left continually engaged once the start point has been selected and the half nut is initially engaged (thread dial cannot be used).

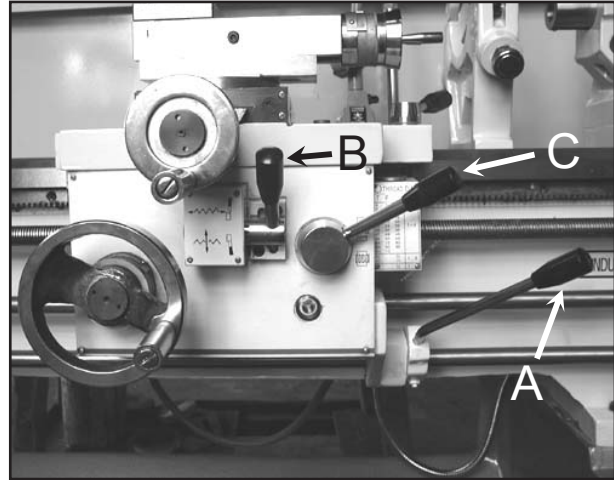


Fig. 19

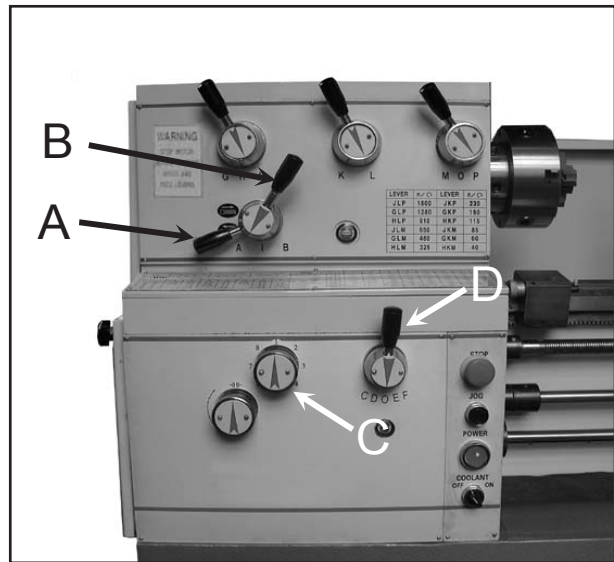
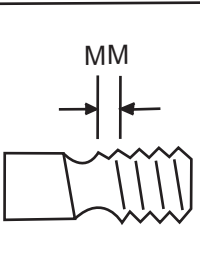


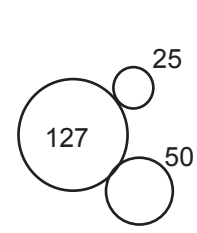


Fig. 20

### Metric Thread Table

	127		127		127			
	40		40		30			
	32		40		40			
	1	3	6	3	1	2	3	
	A C	7.5	6.0	5.0	4.8	4.5	4.0	
B C	3.75	3.0	2.5	2.4	2.25	2.0	1.8	
A E		1.5	1.25	1.2		1.0	0.9	
B E		0.75		0.6		0.5	0.45	

### Inch Lead and Feed Table

			1	2	3	4	5	6	7	8
		A	C	4	4½	5	5½	5¾	6	6½
		D	.0294	.0261	.0235	.0214	.0205	.0196	.0181	.0168
	A	C	8	9	10	11	11½	12	13	14
		D	.0147	.0131	.0117	.0107	.0102	.0098	.0090	.0084
	B	C	16	18	20	22	23	24	26	28
		D	.0073	.0065	.0058	.0053	.0051	.0049	.0045	.0042
	A	E	32	36	40	44	46	48	52	56
		F	.0042	.0038	.0034	.0031	.0030	.0028	.0026	.0024
	B	E	64	72	80	88	92	96	104	112
		F	.0021	.0019	.0017	.0015	.0015	.0014	.0013	.0012

### Compound Rest

The compound rest is located on top of the cross slide and can be rotated 360 degrees. Loosen the two socket head cap screws (A, Fig. 21) on the compound rest base. There is a calibrated dial (in degrees B, Fig. 21) below the rest to assist in placement of the compound to the desired angle.

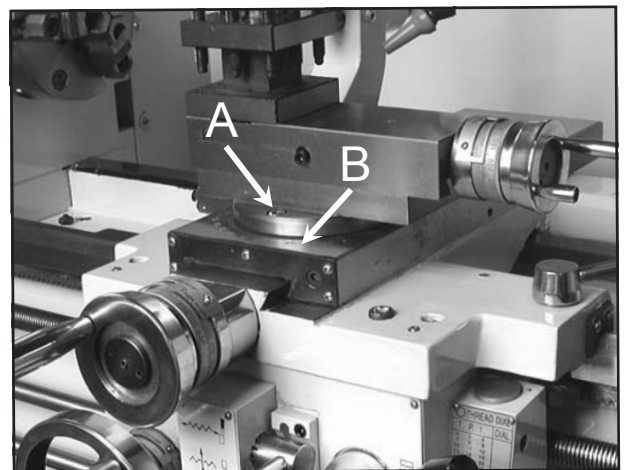


Fig. 21



## Adjustments

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

### Saddle

1. Locate four hex nuts found on the bottom rear of the cross slide and back off one full turn each.
2. Turn each of the four set screws with a hex wrench until a slight resistance is felt. Do not over tighten these screws.
3. Move the carriage with the hand wheel and determine if the drag is to your preference. Readjust the set screws as necessary to achieve the desired drag.
4. Hold the socket set screw firmly with a hex wrench and tighten the hex nut to lock the set screw in place.
5. Move the carriage again and adjust again if necessary.

Note: over adjustment will cause excessive premature wear of the gibs.

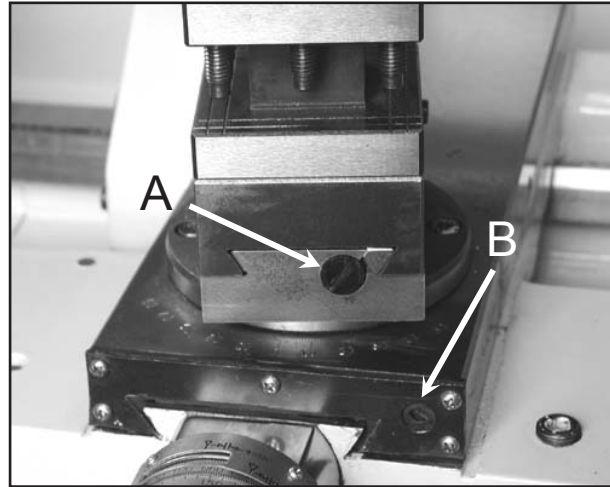


Fig. 22

### Cross Slide

If the cross slide is too loose, follow procedure below to tighten:

1. Loosen the rear gib screw (not shown) approximately one turn.
2. Tighten the front gib screw (B, Fig. 22) a quarter turn. Turn the cross slide handwheel to see if the cross slide is still loose. If it is still loose, tighten the front screw a bit more and try again.
3. When the cross slide is properly adjusted, tighten the rear gib screw.

Note: over adjustment will cause excessive premature wear of the gibs.

### Compound Rest

Follow the same procedure as the cross slide adjustment to adjust the compound rest. Rear gib screw is shown (A, Fig. 22). Front gib screw (not shown) is by the handwheel.

## Tailstock

If the handle will not lock the tailstock, follow the procedure below:

1. Lower the handle to the unlocked position.
2. Slide the tailstock to an area that allows access to the underside of the tailstock.
3. Tighten tailstock clamping bolt (underside of tailstock) 1/4 turn. Test for proper locking. Repeat as necessary.

## Tailstock Off-Set

Follow the procedure below to off-set the tailstock to cut shallow tapers:

1. Lock tailstock in position by raising locking handle (A, Fig. 23).
2. Alternately loosen and tighten two hex socket cap screws (B, Fig. 23).

## Tailstock Gibs

Take up play in the tailstock by tightening two gib screws (C, Fig. 23) on either side of the tailstock base.

Note: Do not over tighten. Excessive tightening will lead to premature wear of the gibs and mating parts.

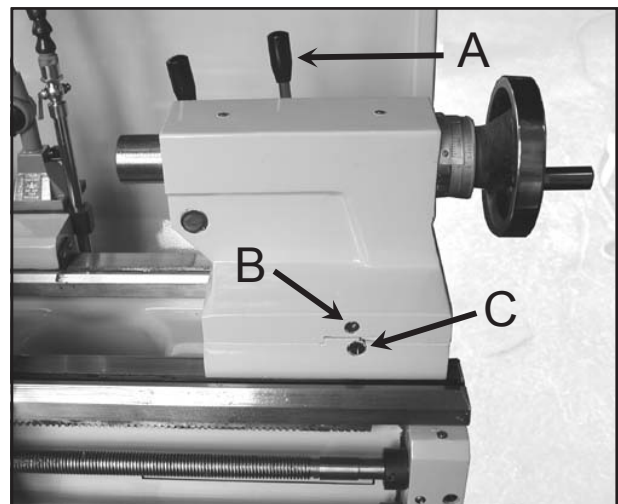


Fig. 23

## 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 level side to side and front to back. If 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.

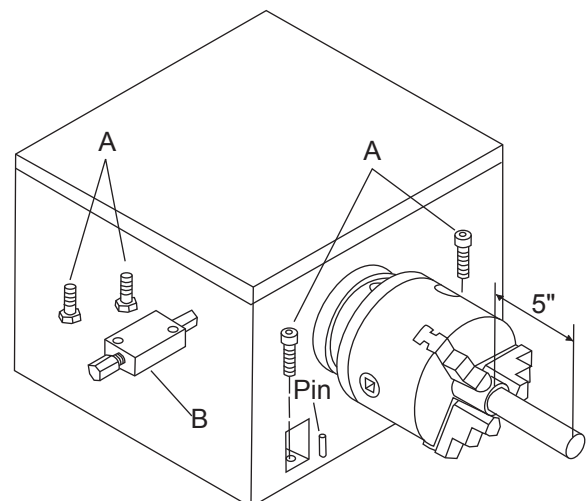


Fig. 24

4. Set up and cut along five inches of the bar stock.
5. Using a micrometer, measure the bar stock next to the chuck and at the end. The measurement should be the same.
6. If the measurements are not the same and adjustment is required, loosen hex socket cap screws (A, Fig. 24) which holds the headstock to the bed. Do not loosen completely; some drag should remain.
7. Adjust two screw nuts (B, Fig. 24) 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.

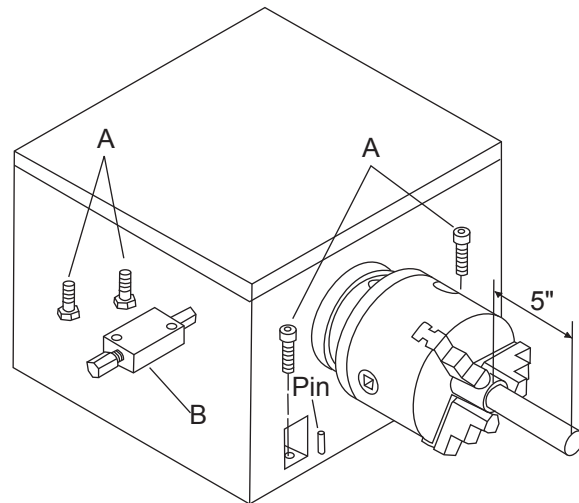


Fig. 24

#### Removing Gap Section

1. To remove gap section, locate two nuts (A, Fig. 25) in the center of the gap section.
2. Using an open end wrench, tighten the two nuts. This will cause the taper pins to release. Remove the taper pins.
3. Remove six hex socket cap screws (B, Fig. 25) with a hex key wrench.
4. Gap section can now be removed.

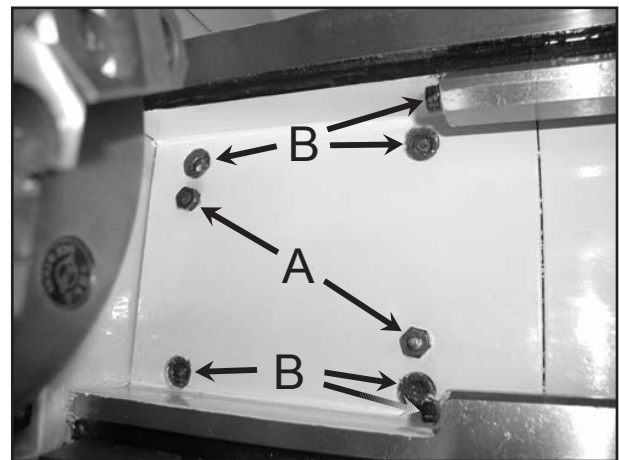


Fig. 25

#### Installing Removable Gap Section

1. Clean the bottom and the ends of the gap section thoroughly.
2. Set gap section in place and align.
3. Remove nuts from the taper pins.
4. Slide taper pins in their respective holes and seat using a mallet. Install nuts on the taper pins finger tight.
5. Install six socket head cap screws and tighten securely.

## Belt Replacement and adjustment

1. Disconnect machine from the power source (unplug).
2. Open the end gear cover and lower cover on the headstock side.
3. Take tension off old belts by loosening motor mount hex nut (A, Fig. 26).
4. Remove belts. Install new belts onto pulleys.
5. Tension by tightening motor mount hex nut until 8 lbs. force causes approximately 3/4" deflection on belts.
6. Close end gear door, install cover and connect lathe to the power source.

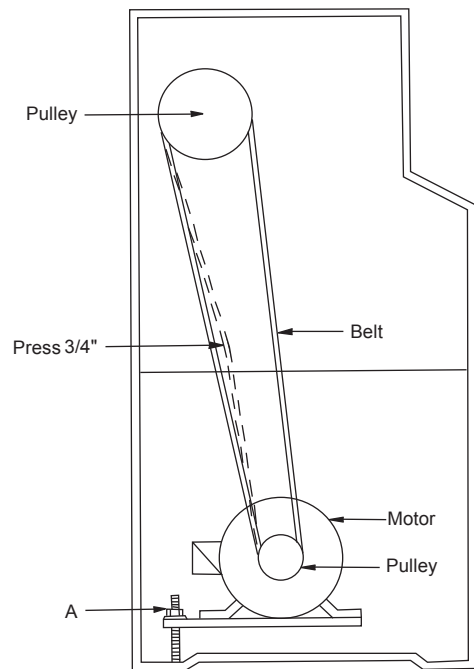


Fig. 26

## Aligning Tailstock to Headstock

Before proceeding, headstock should be aligned. See section labeled "Headstock Alignment".

1. Fit a 12" ground steel bar between centers of the headstock and tailstock (Fig. 27).
2. Fit a dial indicator to the compound slide and traverse the center line of the bar, using the carriage movement.
3. If tailstock adjustment is needed, alternately loosen and tighten front and rear hex socket cap screws (A, Fig. 28).

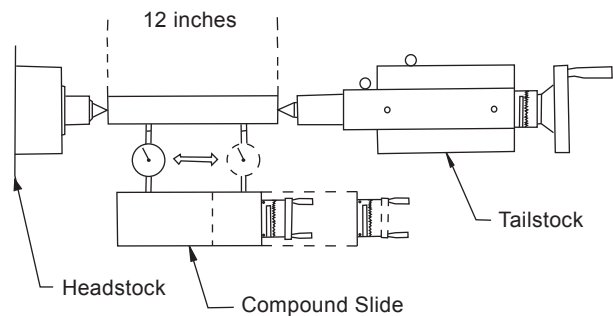


Fig. 27

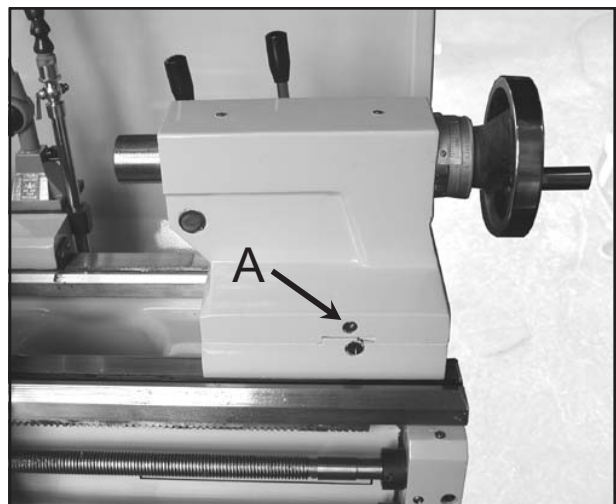
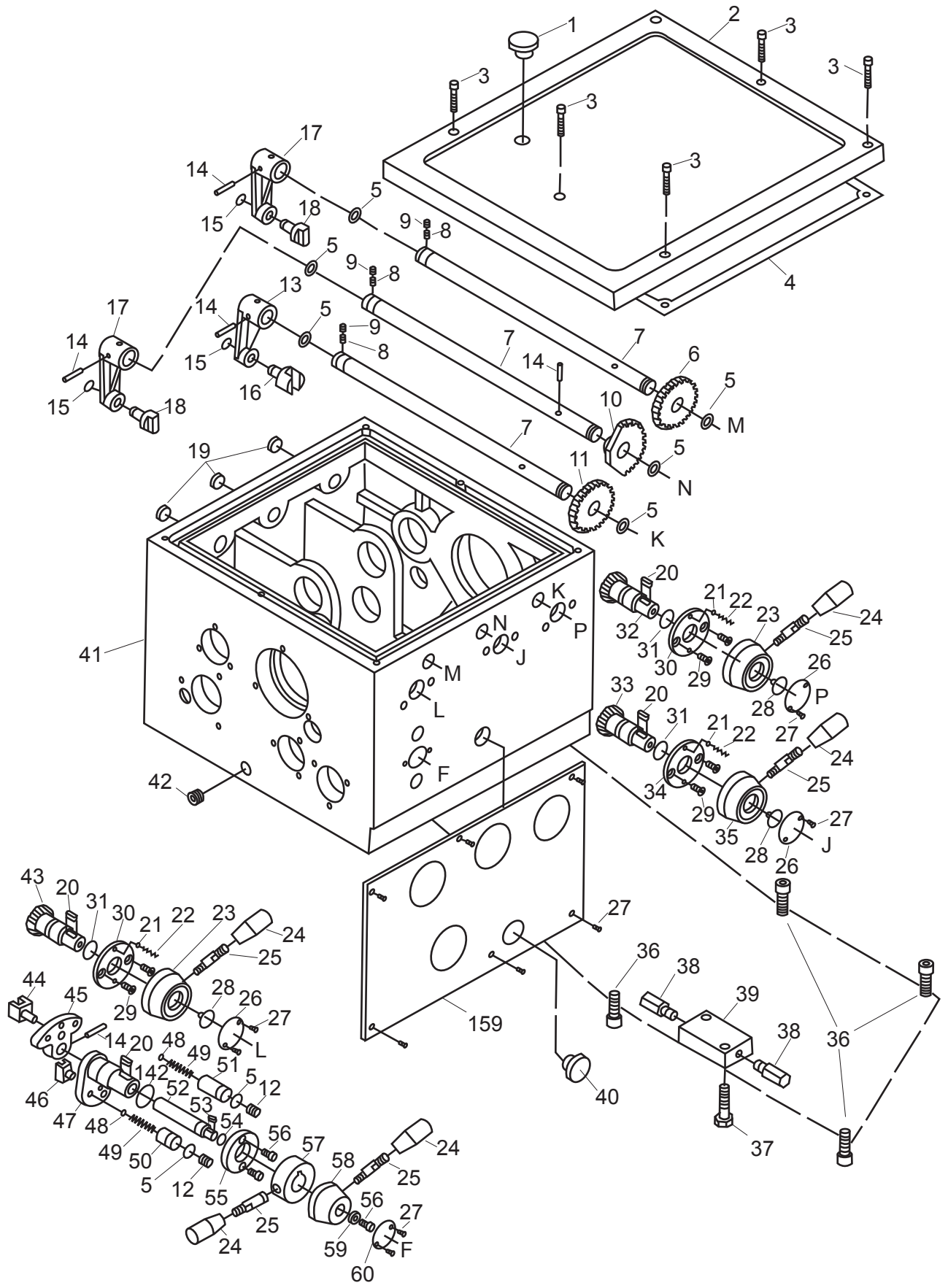


Fig. 28

# Headstock Assembly I



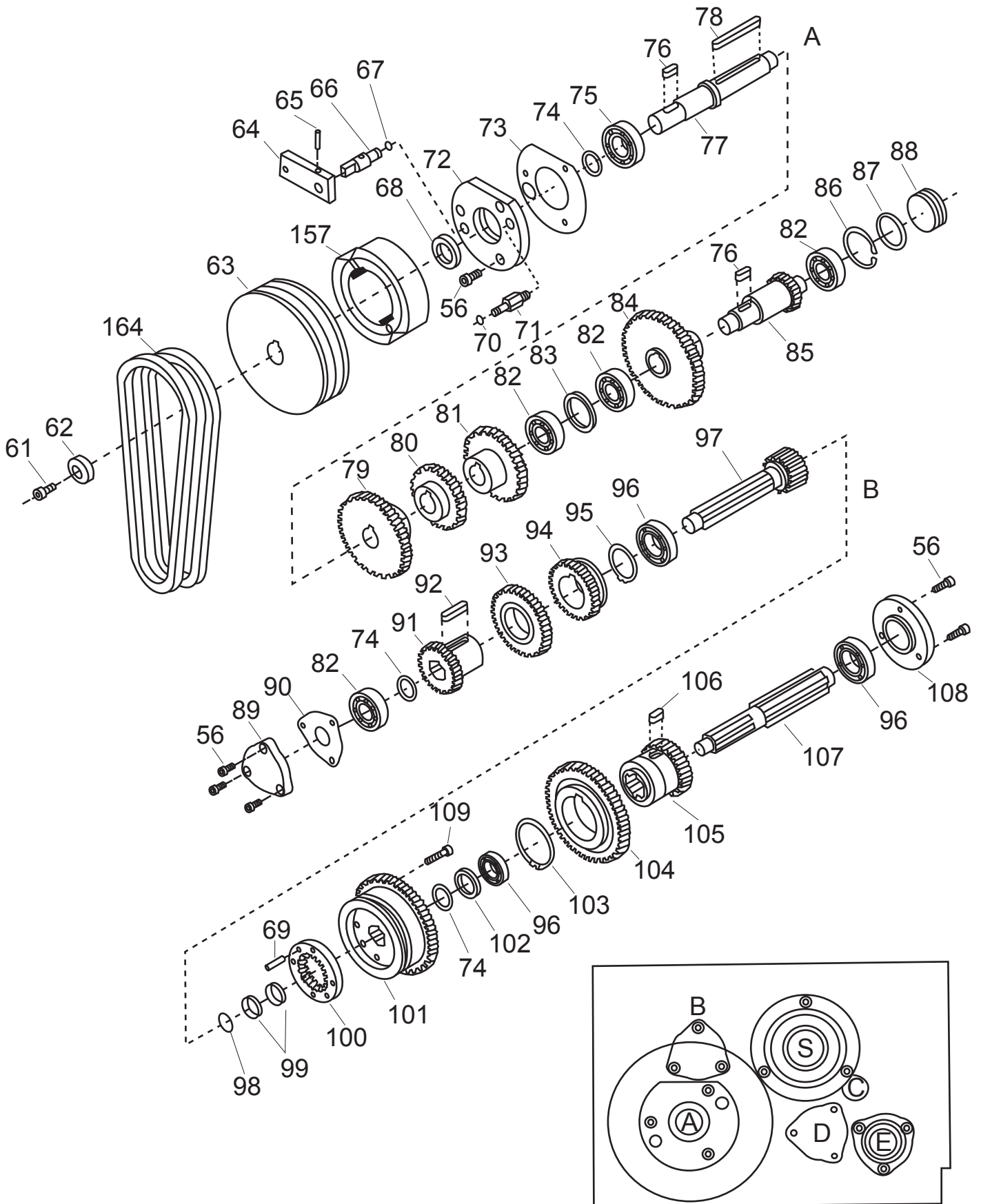
Headstock Assembly I

Index No.	Part No.	Description	Size	Quantity
1	GH1340A-04-06	Plug		1
2	GH1440W-04-60	Headstock Cover		1
3	TS-1503081	Hex Socket Cap Screw	M6x35	6
4	GH1440W-04-61	Gasket		1
5	GB3452.1-14X2.65	O-Ring	14x2.65	8
6	GH1440W-04-38	Gear	38T	1
7	GH1440W-04-41	Shaft		3
8	GB75-M6X10	Set Screw	M6x10	3
9	GB77-M6X6	Set Screw	M6x6	3
10	GH1440W-04-37	Gear	48T	1
11	GH1440W-04-36	Gear	43T	1
12	GB77-M12X12	Set Screw	M12x12	2
13	GH1440W-04-43	Shift Arm		1
14	GB879-5X30	Spring Pin	5x30	7
15	GB894.2-12	Retainer Ring	12	3
16	GH1440W-04-45	Shift Fork		1
17	GH1440W-04-35	Shift Arm		2
18	GH1440W-04-44	Gear Shifter		2
19	04-10	Plug		3
20	GB1096-5X16	Key	5x16	4
21	GB308-SB8	Steel Ball	8	5
22	C6240-20018	Spring		5
23	GH1440W-04-49	Handle Boby		2
24	GB4141.14-BM10X50	Handle Cap		5
25	GH1440W-04-34	Handle Lever		5
26	C6240-20001	Lever Name Plate		3
27	TS-1531012	Pan Head Machine Screw	M3x6	14
28	GH1440W-04-59	Screw		3
29	TS-1503031	Screw	M6x12	6
30	GH1440W-04-50	Position Plate		2
31	GB3452.9-19X2.65	O-Ring	19x2.65	3
32	GH1440W-04-40	Gear Shaft	22T	1
33	GH1440W-04-42	Gear Shaft	17T	1
34	GH1440W-04-51	Position Plate		1
35	GH1440W-04-48	Handle Boby		1
36	TS-1506041	Hex Socket Cap Screw	M12x35	4
37	GB5782-M10X40	Alignment Bolt	M10x40	2
38	GH1440W-04-62	Alignment Bolt		2
39	GH1440W-04-63	Alignment Block		1
40	GB1160.1-89	Oil Sight Glass	20	1
41	GH1440W-04-01	Headstock Casting (14")		1



Index No.	Part No.	Description	Size	Quantity
	GH1340W-04-01	Headstock Casting (13")		1
42	05-75	Drain Plug		1
43	GH1440W-04-39	Gear Shaft	27T	1
44	GH1440W-04-47	Shaft Fork		1
45	GH1440W-04-36	Shifting Crank		1
46	GH1440W-04-71	Shaft Fork		1
47	GH1440W-04-56	Shifting Crank		1
48	GB308-SB9	Steel Ball	9	2
49	GH1440W-49	Spring		2
50	GH1440W-04-52	Shaft		1
51	GH1440W-04-54	Shaft		1
52	GH1440W-04-53	Shaft		1
53	GB1096-4X10	Key	4x10	1
54	GB3452.9-10.6X2.65	O-Ring	10.6x2.65	1
55	GH1440W-04-55	Collar		1
56	TS-1503031	Hex Socket Cap Screw	M6x12	18
57	GH1440W-04-57	Collar		1
58	GH1440W-04-58	Handle Boby		1
59	04-62	Washer		1
60	04-90	Indicator Disk		1
142	GB3452.9-25X2.65	O-Ring	25x2.65	3
159	GH1440W-04-02	Name Plate		1

# Headstock Assembly II

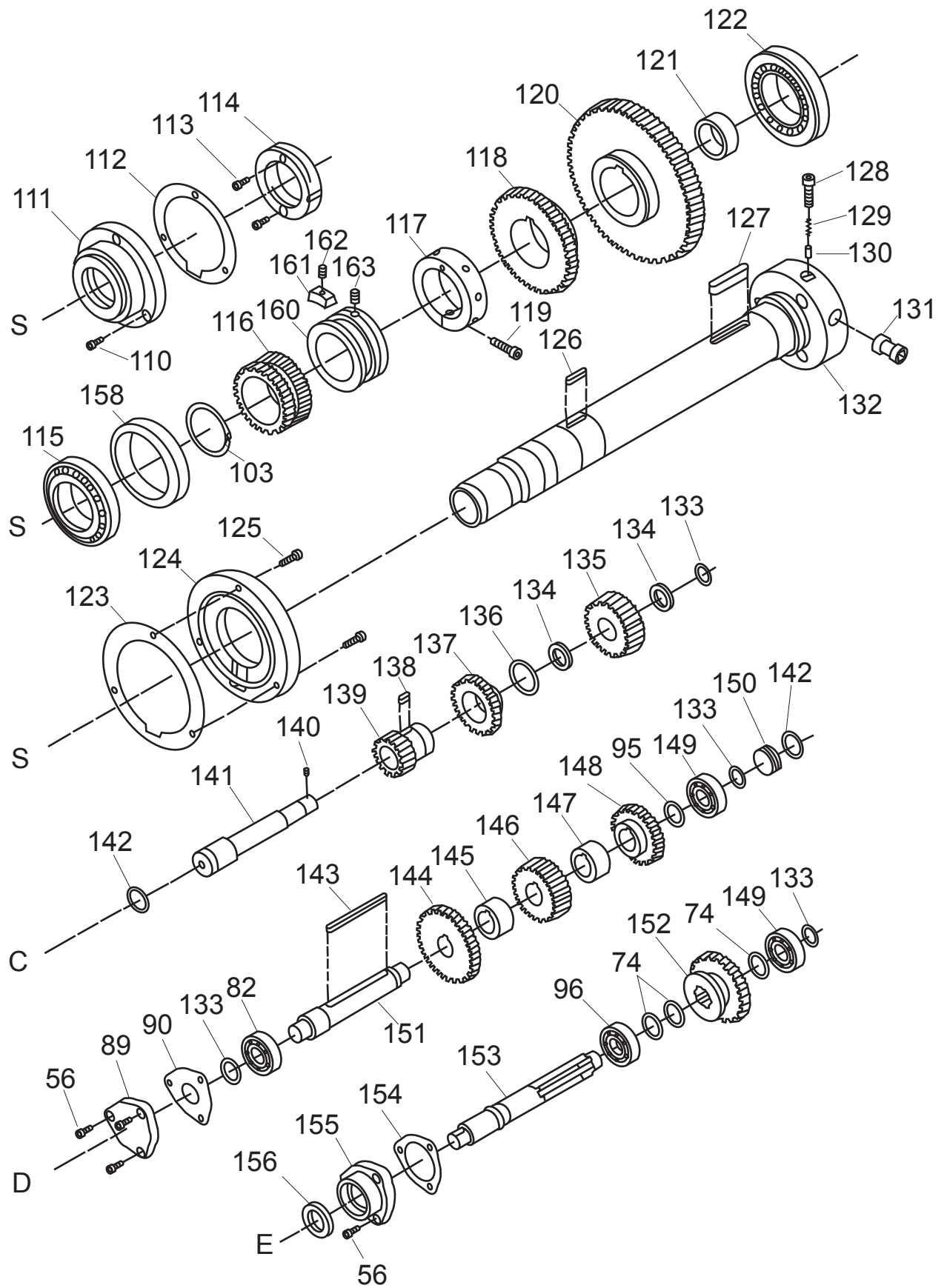


Headstock Assembly II

Index No.	Part No.	Description	Size	Quantity
56	TS-1503031	Hex Socket Cap Screw	M6x12	18
61	TS-1504041	Hex Socket Cap Screw	M8x20	1
62	04-12	Washer		1
63	04-11	Pulley		1
64	11-10	Break Block		1
65	GB879-5X16	Pin	5x16	1
66	11-09	Brake Actuator Shaft		1
67	GB894.2-12	Retainer Ring	12	1
68	GB9877.1-SD25X45X7	Spacer	SD25x45x7	1
69	GB117-A6X26	Pin	A6x26	2
70	GB894.2-8	Retainer Ring	8	1
71	11-11	Brake Retainer Stud		1
72	04-13	Cover		1
73	04-14	Gasket		1
74	GB894.2-25	Retainer Ring	25	6
75	GB/T276-6205	Ball Bearing	6205/p5	1
76	GB1096-8X20	Key	8x20	2
77	GH1440W-04-03	Shaft		1
78	GB1096-8X72	Key	8x72	1
79	GH1440W-04-04	Gear	50T	1
80	GH1440W-04-05	Gear	37T	1
81	GH1440W-04-06	Gear	43T	1
82	GB/T276-6204	Ball Bearing	6204/p5	5
83	GH1440W-04-17	Washer		1
84	GH1440W-04-12	Gear	57T	1
85	GH1440W-04-11	Gear Shaft	20T	1
86	GB893.1-47	Retainer Ring	47	1
87	GB3452.1-40X2.65	O-Ring	40x2.65	1
88	04-28	Plug		1
89	04-53	Bearing Cap		2
90	04-52	Bearing Cap Gasket		2
91	GH1440W-04-08	Gear	28T	1
92	GB1096-8X38	Key	8x38	1
93	GH1440W-04-09	Gear	41T	1
94	GH1440W-04-10	Gear	34T	1
95	GB894.2-40	Retainer Ring	40	2
96	GB/T276-6005	Ball Bearing	6005/p5	4
97	GH1440W-04-07	Gear Shaft	21T	1
98	GB894.2-17	Retainer Ring	17	1
99	GB/T276-61803	Ball Bearing	61803/p5	2
100	GH1440W-04-15	Gear	21T	1

Index No.	Part No.	Description	Size	Quantity
101	GH1440W-04-14	Gear	58T	1
102	GH1440W-04-16	Washer		1
103	GB894.2-55	Retainer Ring	55	2
104	GH1440W-04-19	Gear	59T	1
105	GH1440W-04-18	Gear	31T	1
106	GB1096-10X18	Key	10x18	1
107	GB1440W-04-13	Spline Shaft		1
108	GH1440W-04-24	Cover		1
109	TS-1503081	Hex Socket Cap Screw	M6x35	4
157	11-15	Brake Shoe Assembly		1
164	VB-A73	V-Belt(for GH-1340W-1/3,GH-1440W-1)		2
	VB-A74	V-Belt(for GH-1440W-3)		2

# Headstock Assembly III



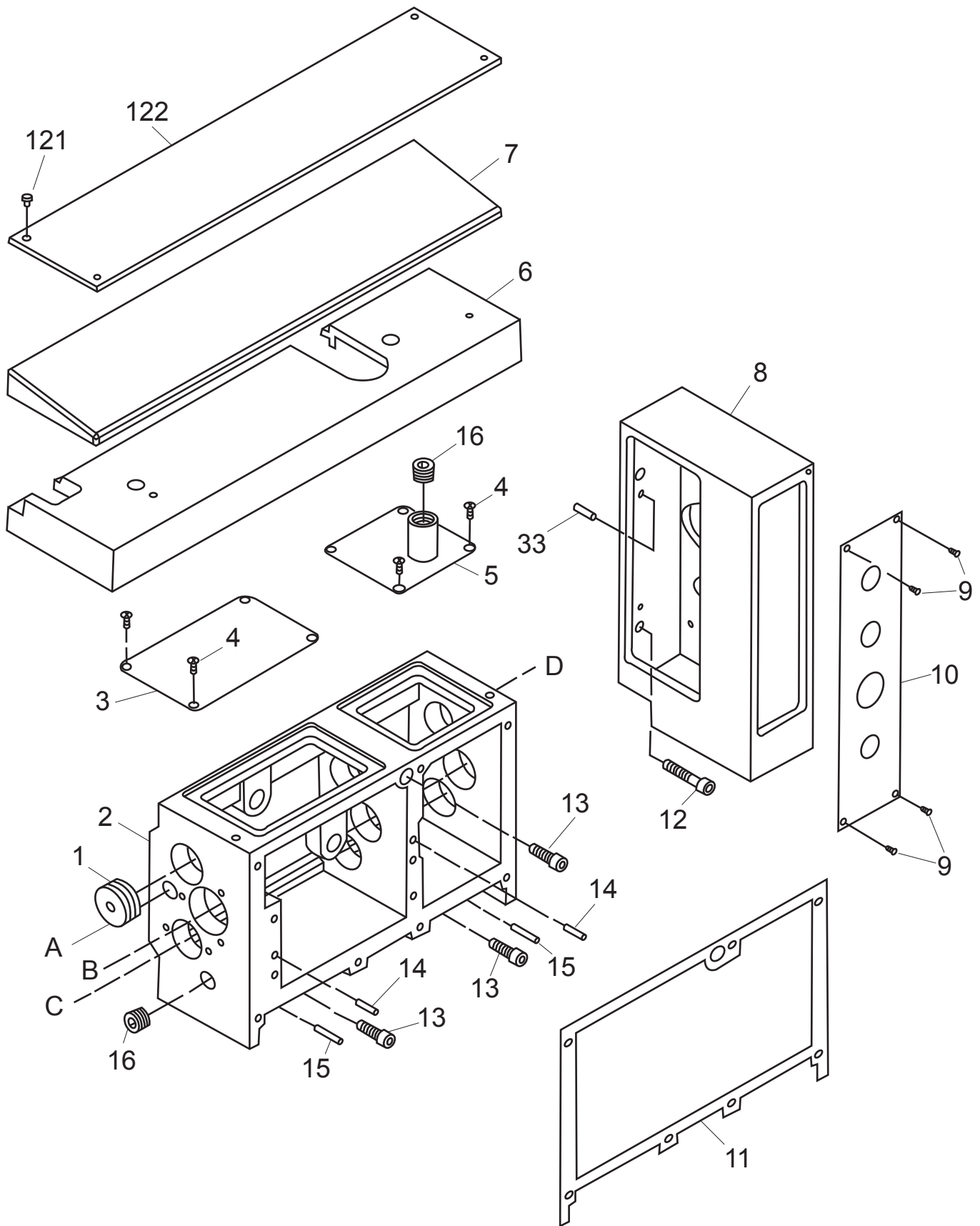
### Headstock Assembly III

Index No.	Part No.	Description	Size	Quantity
56	TS-1503031	Hex Socket Cap Screw	M6x12	18
74	GB894.2-25	Retainer Ring	25	6
82	GB/T276-6204	Ball Bearing	6204/p5	5
89	04-53	Bearing Cap		2
90	04-52	Bearing Cap Gasket		2
95	GB894.2-40	Retainer Ring	40	2
96	GB/T276-6005	Ball Bearing	6005/p5	4
102	GH1440W-04-16	Washer		1
110	TS-1503041	Hex Socket Cap Screw	M6x16	3
111	GH1440W-04-29	Cover		1
112	04-60	Gasket		1
113	TS-1502031	Hex Socket Cap Screw	M5x12	2
114	GH1440W-04-31	Nut		1
115	GB/T297-32011	Tapered Roller Bearing	32011/p5	1
116	GH1440W-04-30	Gear	38T	1
117	GH1440W-04-27	Lock Collar		1
118	GH1440W-04-21	Gear	59T	1
119	TS-1504061	Hex Socket Cap Screw	M8x30	1
120	GH1440W-04-23	Gear	87T	1
121	GH1440W-04-25	Collar		1
122	GB/297-30212	Tapered Roller Bearing	30212/p5	1
123	GH1440W-04-32	Gasket		1
124	GH1440W-04-28	Cover		1
125	TS-1503051	Hex Socket Cap Screw	M6x20	3
126	GB1096-6X30	Key	6x30	1
127	GB1096-10X55	Key	10x55	1
128	TS-1504031	Hex Socket Cap Screw	M8x16	3
129	04-31/1	Spring		3
130	04-86	Camlock Set Pin		3
131	04-85	Camlock		3
132	GH1440W-04-22	Spindle		1
133	GB894.2-20	Retainer Ring	20	4
134	04-36	Spacer		2
135	04-35	Gear	32T	1
136	GB894.2-37	Retainer Ring	37	1
137	04-54	Gear	32T	1
138	GB1096-5X16	Key	5x16	1
139	04-55	Gear	32T	1
140	TS-1523041	Set Screw	M6x12	1
141	04-37	Shaft		1
142	GB3452.9-25X2.65	O-Ring	25x2.65	3



Index No.	Part No.	Description	Size	Quantity
143	04-47/1	Key	6x90	1
144	04-46	Gear	42T	1
145	04-45	Collar		1
146	04-44	Gear	32T	1
147	04-39	Collar		1
148	04-41	Gear	32T	1
149	GB/T276-6004	Ball Bearing	6004/p5	2
150	GH1440W-04-33	Plug		1
151	04-47	Shaft (D)		1
152	04-43	Gear	38T	1
153	04-42	Spline Shaft (E)		1
154	04-48	Housing Gasket		1
155	04-49	Housing		1
156	GB9877.1-SD25X40X7	Spacer	SD25x40x7	1
158	GH1440W-04-65	Collar		1
160	GH1440W-04-66	Balance Space		1
161	GH1440W-04-67	Balance Block		1
162	TS-1523041	Set Screw	M6x12	1
163	TS-1524031	Set Screw	M8x12	1

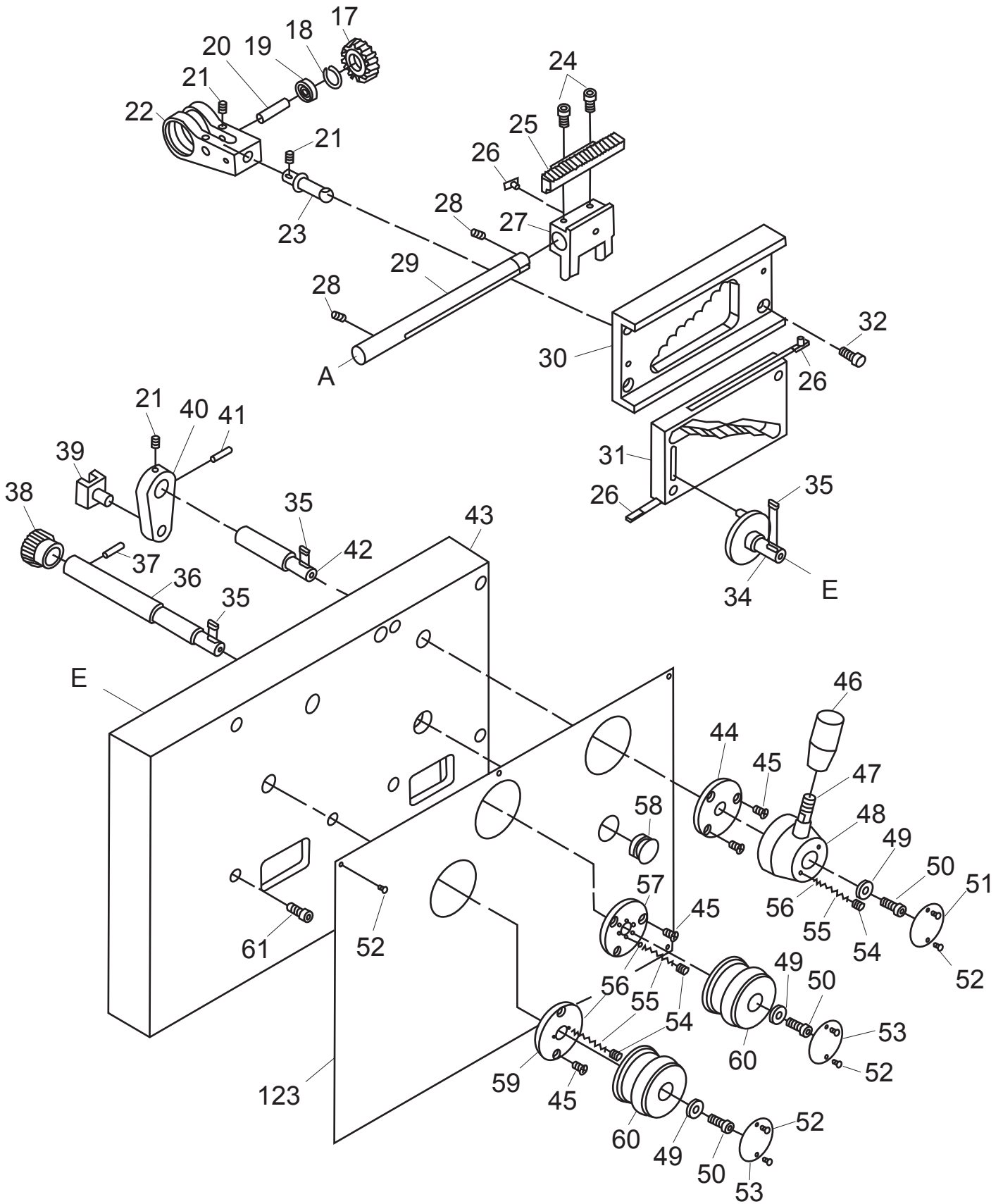
# Gearbox Assembly I



Gearbox Assembly I

Index No.	Part No.	Description	Size	Quantity
1	05-73	Plug		1
2	GH1440W-05-06	Gearbox Casting		1
3	05-07	Front Cover		1
4	TS-1532032	Flat Head Machine Screw	M4x10	8
5	GH1440W-05-26	Oil Cover (14")		1
	GH1340W-05-26	Oil Cover (13")		1
6	GH1440W-05-07/1	Cover (14")		1
	GH1340W-05-07/1	Cover (13")		1
7	GH1440W-05-08	Top Cover		1
8	GH1440W-05-09	Bracket		1
9	TS-1531012	Pan Head Machine Screw	M3x6	4
10	GH1440W-05-11	Electrical Plate		1
11	05-61	Gearbox Gasket		1
12	TS-1504081	Hex Socket Cap Screw	M8x40	2
13	TS-1504051	Hex Socket Cap Screw	M8x25	3
14	GH1440W-14	Pin	5x20	2
15	GH1440W-15	Pin	5x28	2
16	05-75	Plug		2
33	GB118-A8X30	Pin	A8x30	2
121	GB867-2X4	Rivet	2x4	4
122	GH-1440W-05-12/1	Speed Chart		1

# Gearbox Assembly II



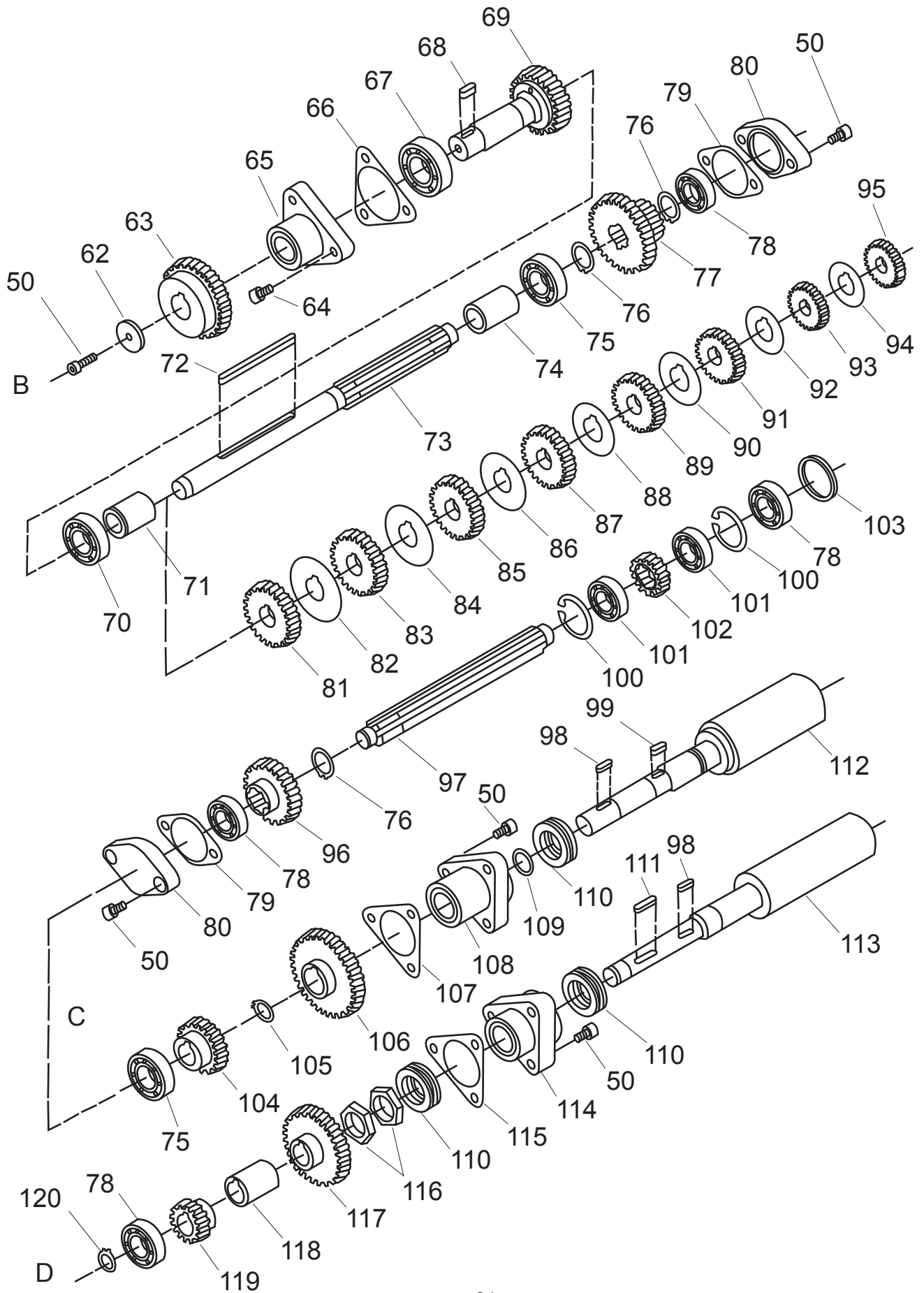
Gearbox Assembly II

Index No.	Part No.	Description	Size	Quantity
17	05-49	Gear	16T	1
18	GH893.1-19	Retainer Ring	19	1
19	GB/T276-6198	Bearing	6198/p5	1
20	05-51	Shaft		1
21	TS-1523021	Set Screw	M6x8	4
22	05-03	Shifter		1
23	05-02	Shaft		1
24	TS-1503051	Hex Socket Cap Screw	M6x20	2
25	05-13	Rack		1
26	05-01	Shift Key		3
27	05-12	Shift Fork		1
28	TS-1523021	Set Screw	M6x8	2
29	05-15	Shaft		1
30	05-05	Locating Plate		1
31	05-04	Control Plate		1
32	TS-1503031	Hex Socket Cap Screw	M6x12	4
33	GB118-A8X30	Pin	A8x30	2
34	05-60	Shift Hub		1
35	GB1096-4X10	Key	4x10	3
36	GH1440W-05-02	Shaft		1
37	GB879-5X20	Pin	5x20	1
38	05-14	Gear	26T	1
39	05-55	Shift Fork		1
40	05-56	Shift Lever		1
41	GB879-5X20	Pin	5x20	1
42	GH1440W-05-03	Shaft		1
43	GH1440W-05-01	Cover		1
44	05-58	Locating Disk		1
45	GB819-M5X10	Flat Head Maching Screw	M5x10	8
46	GB4141.14-BM10X50	Knob		1
47	GH1440W-05-15	Handle Shaft		1
48	GH1440W-05-14	Shift Hub		1
49	05-08	Washer		3
50	TS-1503041	Hex Socket Cap Screw	M6x16	14
51	04-90	Indicator Disk		1
52	TS-1531012	Pan Head Maching Screw	M3x6	12
53	05-70	Indicator Disk		2
54	TS-1524011	Set Screw	M8x8	4
55	05-72	Spring		4
56	GB308-SB6.5	Steel Ball	6.5	4
57	05-10	Locating Disk		1

Index No.	Part No.	Description	Size	Quantity
58	GH1440W-05-27	Oil Sight		1
59	05-59	Locating Disk		1
60	GH1440W-05-13	Shift Hub		2
61	TS-1503081	Hex Socket Cap Screw	M6x35	7
123	GH1440W-05-10-1	Name Plate (1 Phase)		1
	GH1440W-05-10-3	Name Plate (3 Phase)		1
	GH1340W-05-10-1	Name Plate (1 Phase)		1
	GH1340W-05-10-3	Name Plate (3 Phase)		1



# Gearbox Assembly III

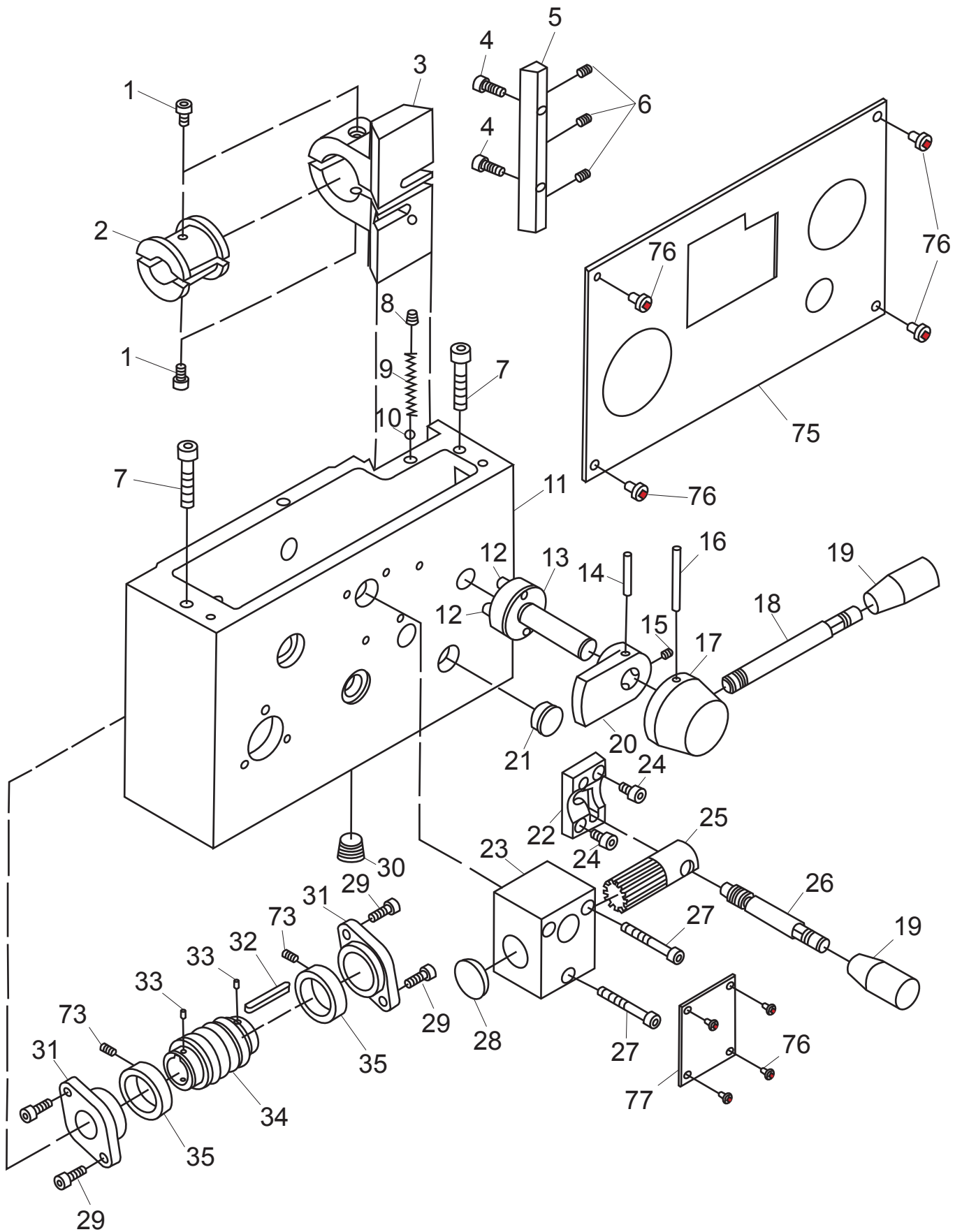


Gearbox Assembly III

Index No.	Part No.	Description	Size	Quantity
50	TS-1503041	Hex Socket Cap Screw	M6x16	14
62	05-42	Washer		1
63	05-41	Gear	50T	1
64	TS-1503051	Hex Socket Cap Screw	M6x20	3
65	05-39	Flange		1
66	05-38	Gasket		1
67	GB/T276-6004	Ball Bearing	6004/p5	1
68	GB1096-5X14	Key	5x14	1
69	05-40	Gear Shaft Assembly		1
70	GB/T276-6002	Ball Bearing	6002/p5	1
71	05-36	Shaft Collar		1
72	GB1096-5X75	Key	5x75	1
73	05-27	Shaft		1
74	05-67	Shaft Collar		1
75	GB/T276-6003	Ball Bearing	6003/p5	2
76	GB894.1-20	Retainer Ring	20	3
77	05-21	Gear	16T/32T	1
78	GB/T276-6202	Ball Bearing	6202/p5	4
79	05-48	Gasket		2
80	05-47	Flange		2
81	05-35	Gear	28T	1
82	GH1440W-05-19	Washer		1
83	05-34	Gear	26T	1
84	GH1440W-05-20	Washer		1
85	05-33	Gear	24T	1
86	GH1440W-05-21	Washer		1
87	05-32	Gear	23T	1
88	GH1440W-05-22	Washer		1
89	05-31	Gear	22T	1
90	GH1440W-05-23	Washer		1
91	05-30	Gear	20T	1
92	GH1440W-05-24	Washer		1
93	05-29	Gear	18T	1
94	GH1440W-05-25	Washer		1
95	05-28	Gear	16T	1
96	05-37	Gear	26T	1
97	05-52	Spline Shaft		1
98	GB1096-5X14	Key	5x14	2
99	GB1096-6X14	Key	6x14	1
100	GB893.1-32	Retainer Ring	32	2
101	GB/T276-61804	Bearing	61804/p5	2

Index No.	Part No.	Description	Size	Quantity
102	05-49	Gear	16T	1
103	GH1340A-05-66	Washer		1
104	05-25	Gear	21T	1
105	GB896-15	Retainer Ring	15	1
106	05-19	Gear	36T	1
107	05-53	Gasket		1
108	05-17	Flange		1
109	GB3452.1-15X2.65	O-Ring	15x2.65	1
110	GB301-8104	Ball Bearing	8104	3
111	GB1096-5X20	Key	5x20	1
112	GH1440W-05-04	Shaft		1
113	GH1440W-05-05	Shaft		1
114	05-18	Flange		1
115	05-53	Gasket		1
116	05-20	Nut		2
117	05-22	Gear	32T	1
118	05-24	Collar		1
119	05-26	Gear	16T	1
120	GB894.1-15	Retainer Ring		1

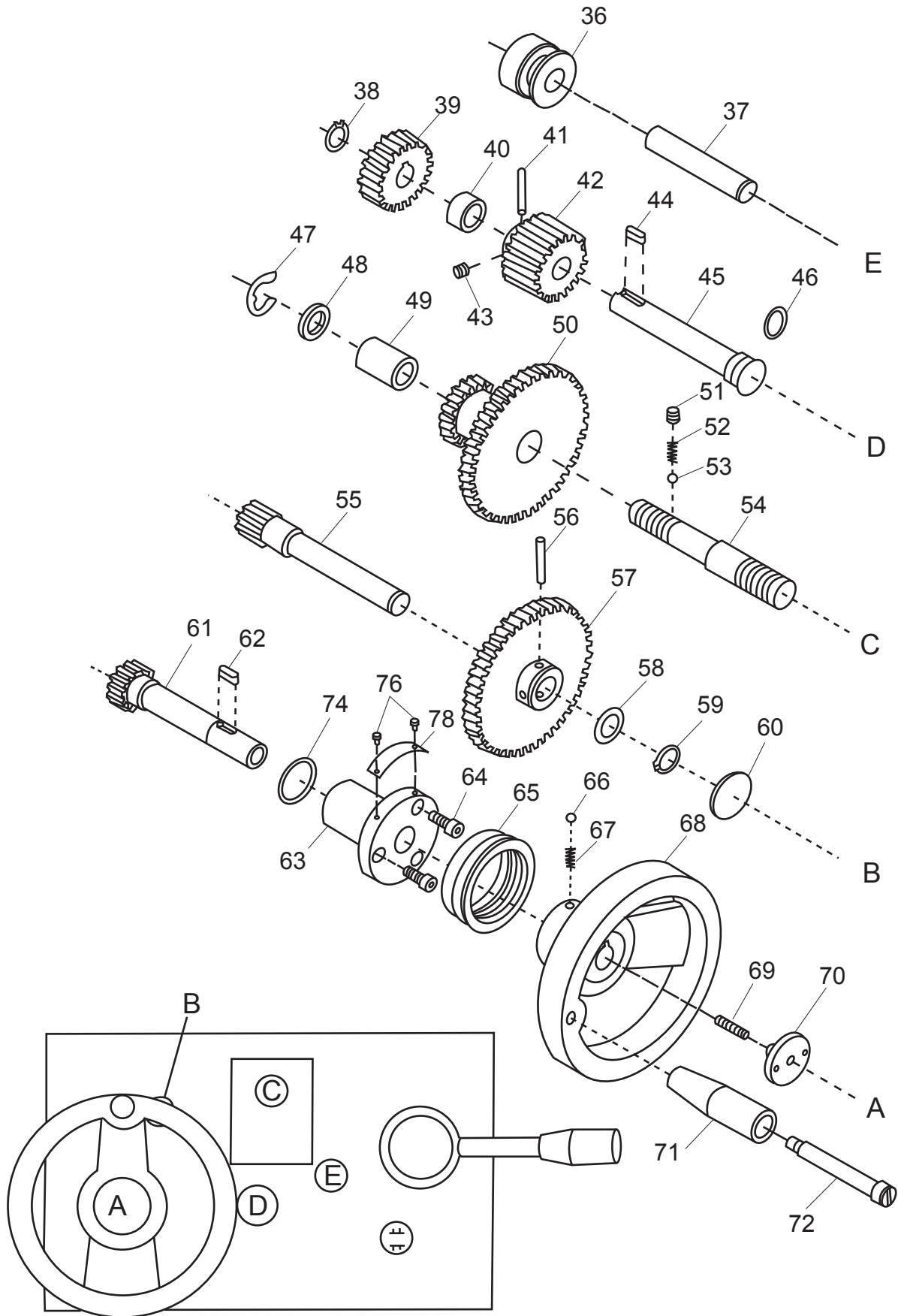
# Apron Assembly I



Apron Assembly I

Index No.	Part No.	Description	Size	Quantity
1	TS-1503021	Hex Socket Cap Screw	M6x10	2
2	06-37	Half Nut		1
3	06-36	Bracket		1
4	TS-1503041	Hex Socket Cap Screw	M6x16	2
5	06-33	Gib		1
6	TS-1523031	Set Screw	M6x10	3
7	TS-1504081	Hex Socket Cap Screw	M8x40	2
8	TS-1524011	Set Screw	M8x8	1
9	06-39	Spring		1
10	GB308-SB6	Steel Ball	6	1
11	06-01	Casting		1
12	06-42-1	Pin		2
13	06-42	Half Nut Cam		1
14	GB879-5X35	Pin	5x35	1
15	TS-1523011	Set Screw	M6x6	1
16	GB879-5X50	Pin	5x50	1
17	GH1440W-06-09	Hub		1
18	GH1440W-06-04	Handle Shaft		1
19	GB4141.14-BM10X50	Knob		2
20	06-40	Safety Catch		1
21	GB1160-12	Sight Glass	12	1
22	06-04	Bracket		1
23	06-16	Block		1
24	TS-1503031	Hex Socket Cap Screw	M6x12	2
25	GH1440W-06-07	Spline Shaft		1
26	GH1440W-06-08	Handle Shaft		1
27	TS-1503101	Hex Socket Cap Screw	M6x45	3
28	06-02	Plug		1
29	TS-1503041	Hex Socket Cap Screw	M6x16	4
30	06-35	Drain Plug		1
31	06-34	Flange		2
32	GB1096-5X56	Key	5x56	1
33	GB879-3X5	Pin	3x5	2
34	06-27	Worm		1
35	06-50	Collar		2
73	TS-1522031	Set Screw	M5x10	2
75	GH1440W-06-01	Apron Label		1
76	TS-1531012	Pan Head Screw	M3x6	10
77	GH1440W-06-03	Thread Dial Label		1
	GHW-AP-CA	Apron Assembly Complete		

# Apron Assembly II

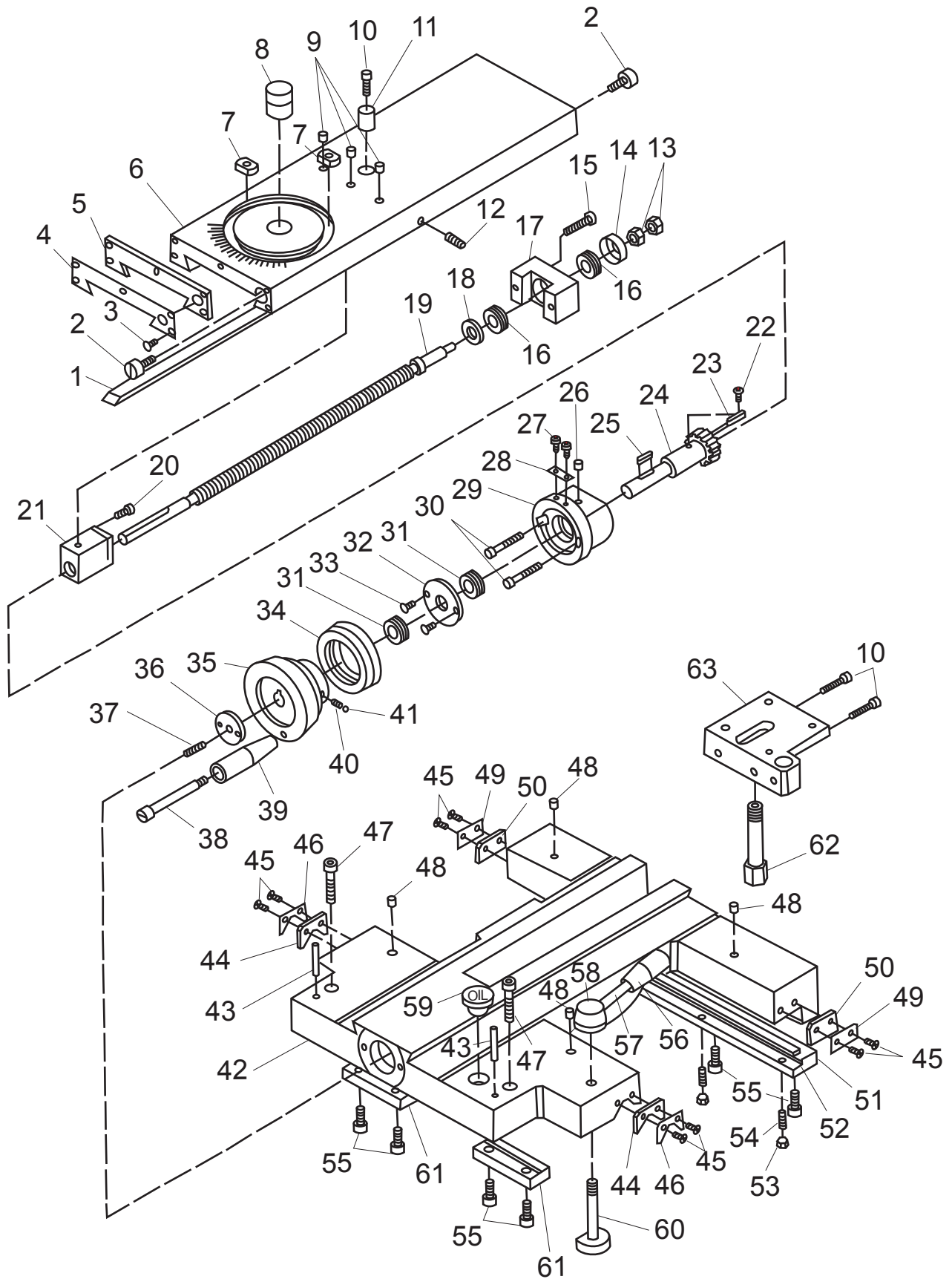




## Apron Assembly II

Index No.	Part No.	Description	Size	Quantity
36	06-44	Bushing		1
37	06-43	Shaft		1
38	GB894.1-16	Retainer Ring	16	1
39	06-28	Gear	22T	1
40	06-26	Collar		1
41	GB879-5X35	Pin	5x35	1
42	06-20	Gear	24T	1
43	TS-1523011	Set Screw	M6x6	1
44	GB1096-5X15	Key	5x15	1
45	06-19	Shaft		1
46	GB3452.1-17X1.8	O-Ring	17x1.8	1
47	GB896-12	Retainer Ring	12	1
48	06-10	Bushing		1
49	06-15-1	Collar		1
50	06-15	Cluster Gear	50T/20T	1
51	TS-1524011	Set Screw	M8x8	1
52	06-14	Spring		1
53	GB308-SB6	Steel Ball	6	1
54	06-13	Shaft		1
55	06-06	Shaft		1
56	GB879-5X30	Pin	5x30	1
57	06-08	Gear	50T	1
58	06-10	Bushing		1
59	GB894.1-16	Retainer Ring	16	1
60	06-11	Plug		1
61	06-07	Shaft		1
62	GB1096-5X15	Key	5x15	1
63	GH1440W-06-05	Wheel Flange		1
64	TS-1503041	Hex Socket Cap Screw	M6x16	3
65	06-31	Indicator Ring		1
66	GB308-SB6	Steel Ball	6	2
67	06-32	Spring		2
68	GH1440W-06-06	Wheel		1
69	TS-1523071	Set Screw	M6x25	1
70	06-30	Wheel Stud		1
71	GH1440W-06-11	Handle Sleeve		1
72	GH1440W-06-10	Handle Lever		1
73	TS-1522031	Set Screw	M5x10	2
74	GB3452.1-25.8X3.55	O-Ring	25.8x3.55	1
76	TS-1531012	Pan Head Screw	M3x6	10
78	GH1440W-06-38	Indicator Label		1

# Carriage & Cross Slide Assembly

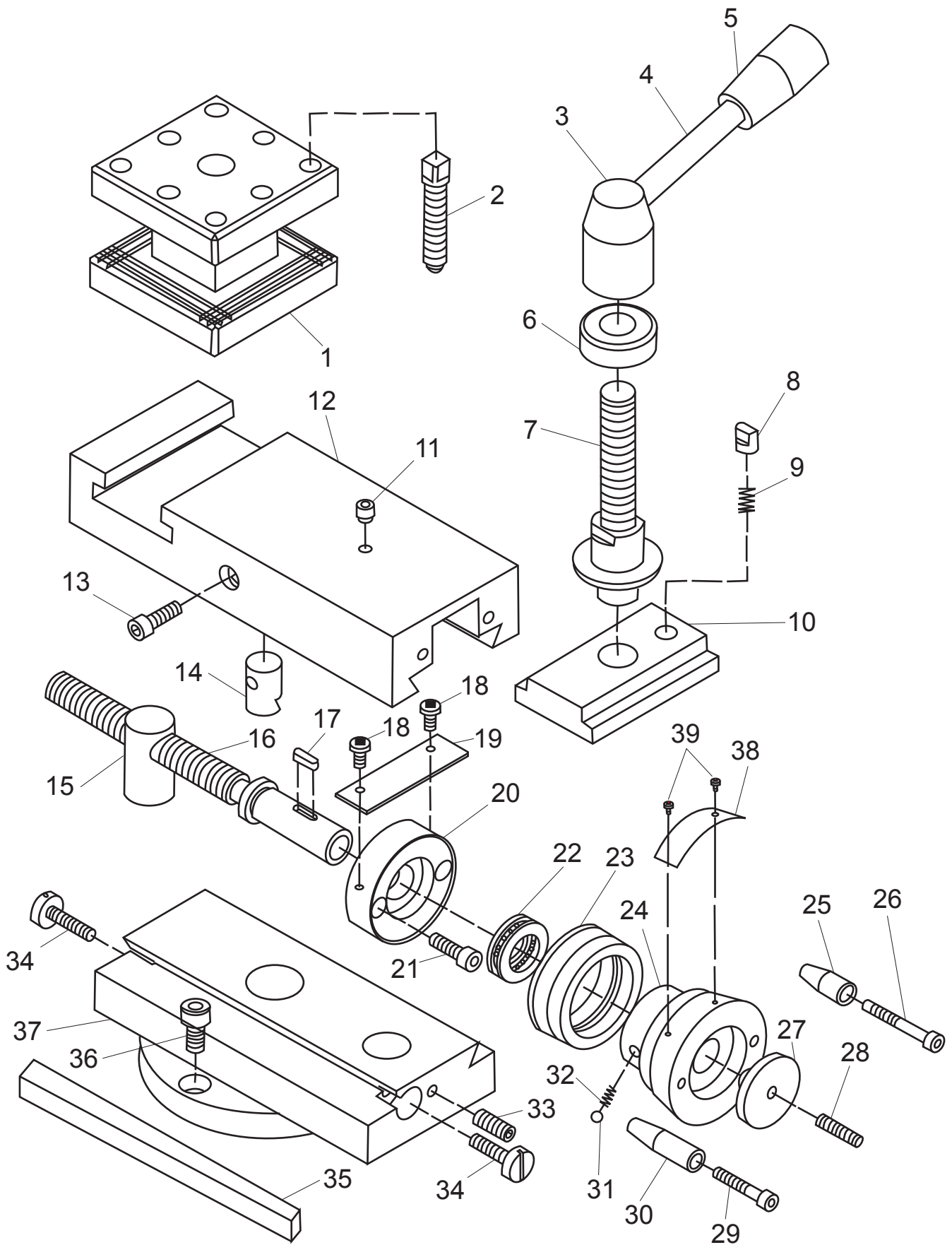


Carriage&Cross Slide Assembly

Index No.	Part No.	Description	Size	Quantity
1	GH1440W-07-04	Gib		1
2	07-28	Gib Adjusting Screw		2
3	GB-818-M5X10	Pan Head Machine Screw	M5x10	5
4	GH1440W-07-12	Plate		1
5	GH1440W-07-11	Plate Wiper		1
6	GH1440W-07-02	Cross Slide Body		1
7	07-07	Clamp Nut		2
8	07-08	Hub		1
9	GB1155-8	Oiler	8	3
10	TS-1503051	Hex Socket Cap Screw	M6x20	3
11	07-05	Sleeve		1
12	TS-1524011	Set Screw	M8x8	1
13	GB6172-M10	Hex Nut	M10	2
14	07-02	Bearing Cap		1
15	TS-1503071	Hex Socket Cap Screw	M6x30	2
16	GB301-8101	Thrust Bearing	8101	2
17	07-03	Block		1
18	07-25	Spacer		1
19	GH1440W-07-16	Leadscrew		1
20	TS-1503031	Hex Socket Cap Screw	M6x12	1
21	GH1440W-07-10	Crossfeed Nut		1
22	GB819-M3X5	Pan Head Machine Screw	M3x5	1
23	07-21	Key	5x25	1
24	GH1440W-07-14	Gear Shaft		1
25	GB1096-4X20	Key	4x20	1
26	GB1155-6	Oiler	6	1
27	GB818-M3X6	Pan Head Screw	M3x6	2
28	07-04-01	Indicator Label		1
29	GH1440W-07-13	Housing		1
30	TS-1503091	Hex Socket Cap Screw	M6x40	2
31	GB301-8102	Thrust Bearing	8102	2
32	07-18	Washer		1
33	TS-2285102	Pan Head Machine Screw	M5x10	2
34	07-17	Index Ring		1
35	GH1440W-07-18	Compound Handle		1
36	07-15	Cover Screw		1
37	TS-1523071	Set Screw	M6x25	1
38	GH1440W-07-17	Handle Lever		1
39	GH1440W-07-26	Handle Sleeve		1
40	GB2089-0.7X5X9	Spring	0.7x5x9	2
41	GB308-SB6	Steel Ball	6	2

Index No.	Part No.	Description	Size	Quantity
42	GH1440W-07-01	Saddle		1
43	GB117-6X40	Pin	6x40	2
44	GH1440W-07-03	Plate Wiper		2
45	TS-2285102	Pan Head Machine Screw	M5x10	8
46	GH1440W-07-07	Plate		2
47	TS-1515051	Hex Socket Cap Screw	M8x40	2
48	GB1155-79	Oiler		4
49	GH1440W-07-05	Plate		2
50	GH1440W-07-06	Plate Wiper		2
51	07-24	Rear Pressure Plate		1
52	07-23	Gib		1
53	GB6170-M6	Lock Nut	M6	4
54	TS-1523061	Set Screw	M6x20	4
55	TS-1504041	Hex Socket Cap Screw	M8x20	6
56	GB4141.14-M10X50	Handle Knob	M10x50	1
57	GH1440W-07-27	Handle Shaft		1
58	GH1440W-07-25	Hub		1
59	04-06	Oil Cap		1
60	GH1440W-07-08	Lock Stud		1
61	GH1440W-07-09	Front Pressure Plate		2
62	14-04	Connected Tube		1
63	14-03	Lamp Bracket		1
	GHW-CFLA	Cross Feed Lead Screw & Nut Assy. (includes #19-21)		
	GHW1440W-CFDA	Cross Feed Dial Assy. (includes 22-26, 29-41)		

# Four Way Tool Post & Compound Slide Assembly



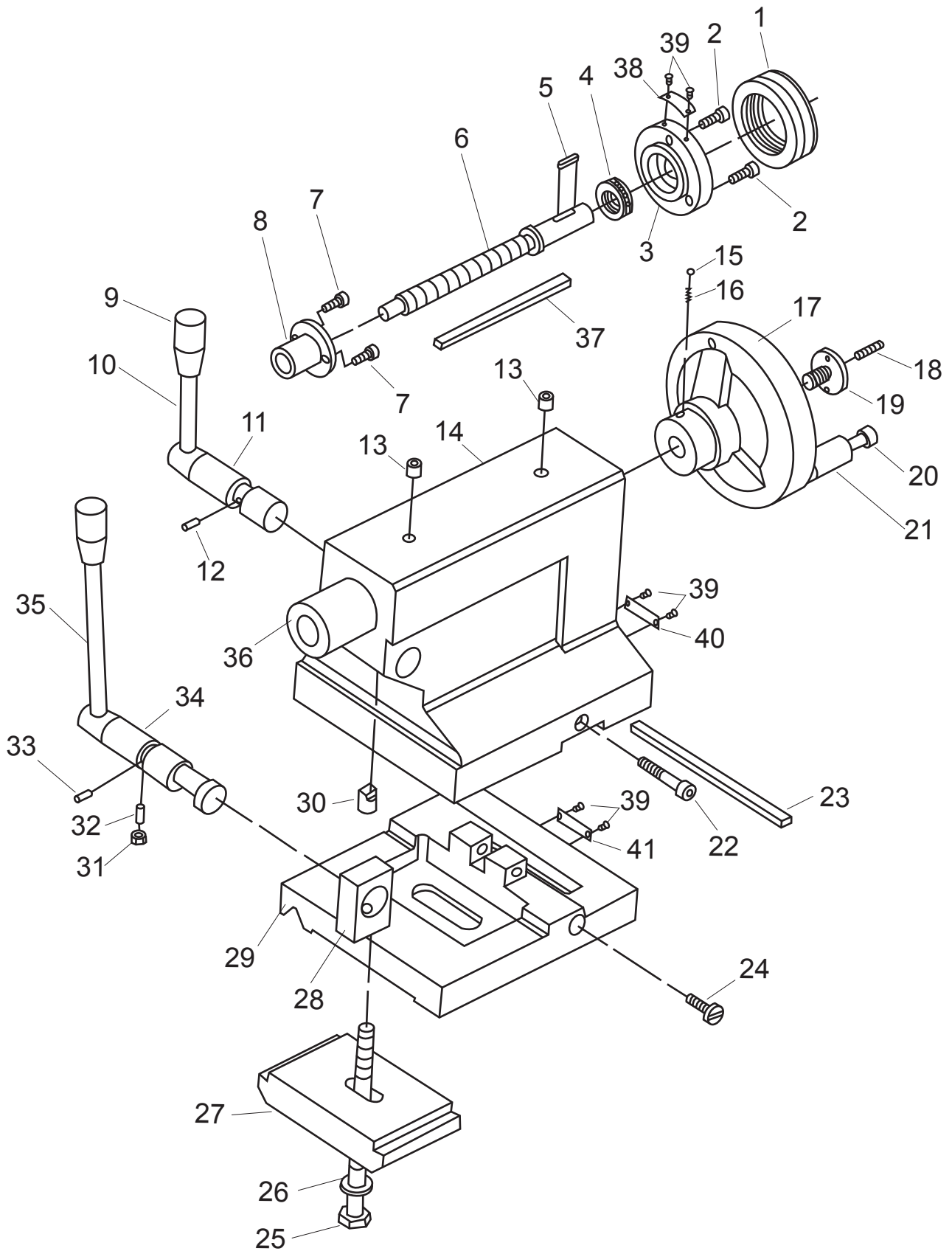
Four Way Tool Post & Compound Slide Assembly

Index No.	Part No.	Description	Size	Quantity
1	07-32	Tool Post		1
2	GB83-10X50	Tool Lock Screw	10x50	8
3	GH1440W-07-20	Handle Hub		1
4	GH1440W-07-21	Handle Shaft		1
5	GB4141.14-BM10X50	Knob		1
6	GH1440W-07-19	Spacer		1
7	07-34	Tool Post Pin		1
8	07-29	Tool Post Pin		1
9	GB2089-1X8X11	Spring	1x8x11	1
10	07-37	Clamp Nut		1
11	GB1155-8	Oiler	8	1
12	07-49	Compound Slide		1
13	TS-1503051	Hex Socket Cap Screw	M6x20	1
14	07-09	Position Pin		1
15	07-39	Nut		1
16	07-40	Compound Screw		1
17	GB1096-4X14	Key	4x14	1
18	TS-1531012	Pan Head Machine Screw	M3x6	2
19	07-04-02	Name Plate		1
20	GH1440W-07-22	Screw Bushing		1
21	TS-1503051	Hex Socket Cap Screw	M6x20	2
22	GB301-8103	Thrust Bearing	8103	1
23	07-42	Index Ring		1
24	GH1440W-07-28	Handwheel		1
25	GH1440W-07-23	Handle		1
26	TS-1513051	Hex Socket Cap Screw	M5x25	1
27	07-15	Cover Screw		1
28	TS-1523071	Set Screw	M6x25	1
29	TS-1502091	Hex Socket Cap Screw	M5x40	1
30	GH1440W-07-24	Handle		1
31	GB308-SB6	Steel Ball	6	2
32	GB2089-0.7X5X5	Spring	0.7x5x5	2
33	TS-1523051	Set Screw	M6x16	1
34	07-28	Gib Adjusting Screw		2
35	07-10	Gib		1
36	TS-1515011	Hex Socket Cap Screw	M8x16	2
37	GH1440W-07-15	Swivel Slide (14" )		1
	GH1340W-07-15	Swivel Slide (13" )		1
38	07-04-02	Indicator Label		1
39	GB818-M3X6	Pan Head Screw	M3x6	2
	GHW-THA	Tool Post Assy.(includes # 1&2		1



Index No.	Part No.	Description	Size	Quantity
	GH1440W-CPA	Compound Assy.(includes # 11-39 for 14")		1
	GH1340W-CPA	Compound Assy.(includes # 11-39 for 13")		1

# Tailstock Assembly

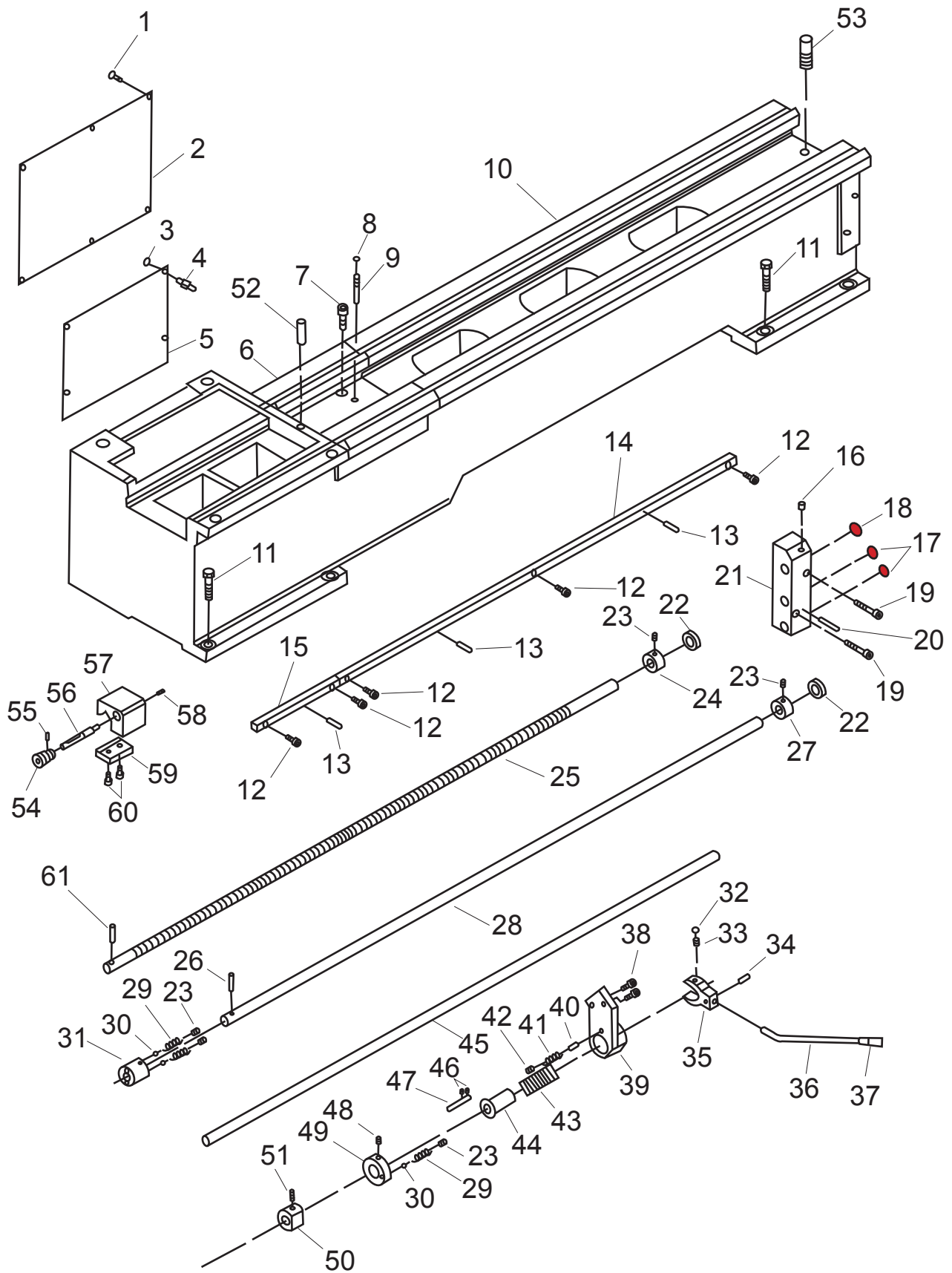


Tailstock Assembly

Index No.	Part No.	Description	Size	Quantity
1	08-09	Index Ring		1
2	TS-1503051	Hex Socket Cap Screw	M6x20	3
3	GH1440W-08-07	Hub		1
4	GB301-8103	Thrust Bearing	8103	1
5	GB1096-4X20	Key	4x20	1
6	08-05	Screw		1
7	TS-1503041	Hex Socket Cap Screw	M6x16	2
8	08-06	Flange		1
9	GB4141.14-BM10X50	Knob		2
10	GH1440W-06-04	Lever Handle		1
11	GH1440W-08-06	Eccentric Shaft		1
12	GB879-5X12	Pin	5x12	1
13	GB1155-10	Oiler	10	2
14	GH1440W-08-01	Tailstock Body		1
15	GB308-SB6	Steel Ball	6	1
16	GB2089-0.7X5X12	Spring	0.7x5x12	1
17	GH1440W-08-09	Wheel		1
18	TS-1523071	Set Screw		1
19	08-12	wheel Screw		1
20	GH1440W-06-10	Handle Lever		1
21	GH1440W-06-11	Handle Sleeve		1
22	GH1440W-T22	Hex Socket Cap Screw	M8x70	2
23	GH1440W-08-03	Gib		1
24	08-18	Gib Adjusting Screw		2
25	TS-1492091	Hex Cap Bolt (for 14" )	M12x90	1
	TS-1492071	Hex Cap Bolt (for 13" )	M12x70	1
26	TS-1550081	Washer	12	1
27	GH1440W-08-04	Tailstock Clamp Plate		1
28	08-16	Block		1
29	GH1440W-08-02	Tailstock Base(for 14" )		1
	GH1340W-08-02	Tailstock Base(for 13" )		1
30	08-02	Stop Pin		1
31	TS-1540041	Nut	M6	1
32	TS-1523051	Set Screw	M6x16	1
33	GB879-5X12	Pin	5x12	1
34	GH1440W-08-05	Eccentric Shaft		1
35	GH1440W-08-08	Lever Handle		1
36	08-04	Spindle		1
37	08-24	Key	3x6x55	1
38	08-07	Indicator Label		1
39	GHW-TA39	Pan Head Screw	M3x6	6

Index No.	Part No.	Description	Size	Quantity
40	08-22	Indicator Label		1
41	08-23	Indicator Label		1
	GH1440W-TA-CA	Tailstock Complete Assembly (for 14")		1
	GH1340W-TA-CA	Tailstock Complete Assembly (for 13")		1

# Bed Assembly



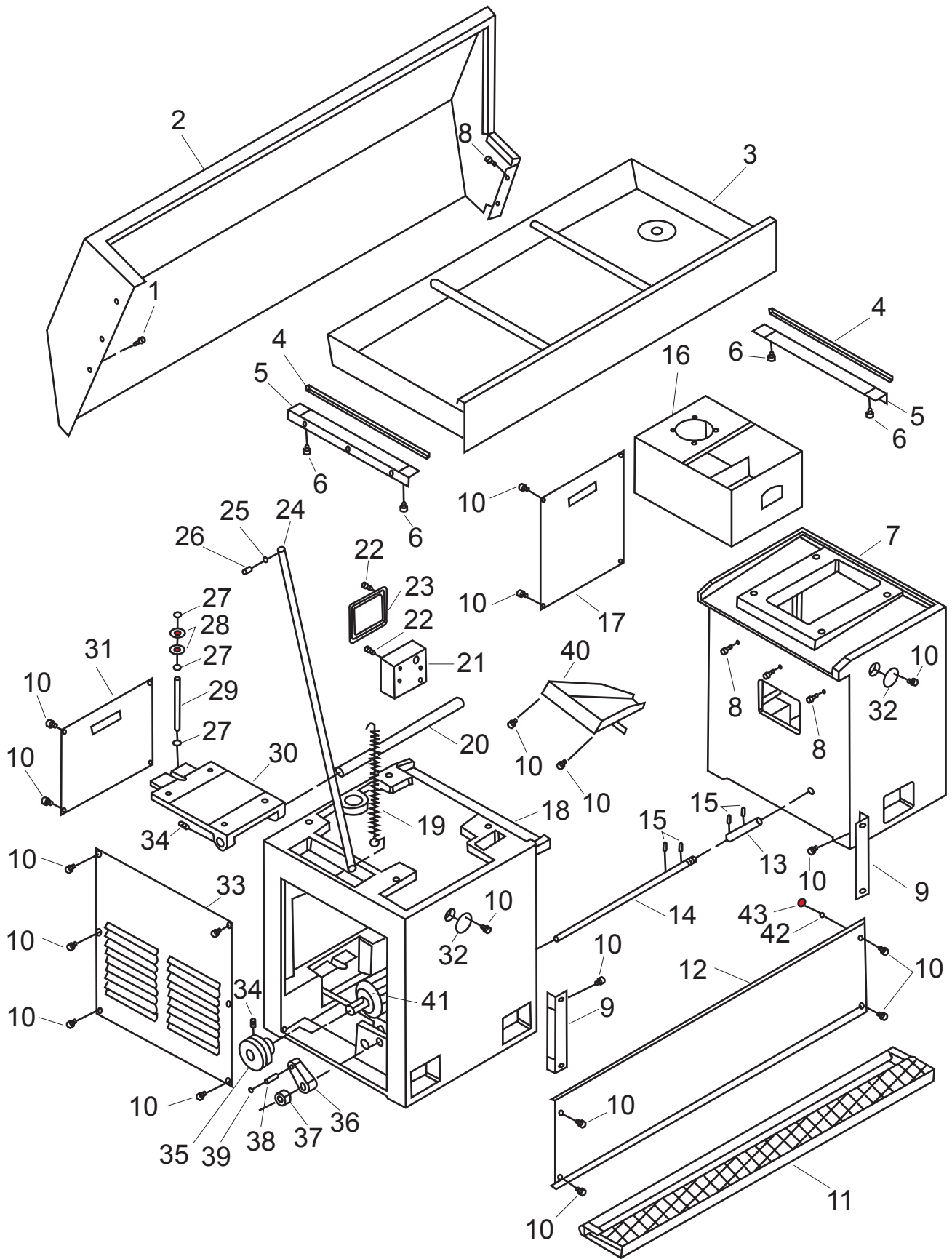
Bed Assembly

Index No.	Part No.	Description	Size	Quantity
1	GB818-M8X10	Pad Head Screw	M8x10	6
2	GH1440W-12-01	Electrical Box Cover		1
3	TS-1540061	Hex Nut	M8	4
4	C6240-120003	Stud		4
5	12-05	Electrical Plate		1
6	GH1440W-01-02	Gap		1
7	TS-1506051	Hex Socket Cap Screw	M12x40	4
8	TS-1540061	Hex Nut	M8	2
9	GB881-8X60	Pin	8x60	2
10	GH1440W-01-01	Bed		1
11	GB5782-M16X50	Hex Cap Bolt	M16x50	8
12	TS-1503061	Hex Socket Cap Screw	M6x25	6
13	GB879-5X35	Pin	5x35	6
14	01-07	Rack(long)		2
15	01-06	Rack(short)		1
16	GB1155-10	Oiler	10	1
17	01-41	Plug		2
18	01-42	Plug		1
19	TS-1504111	Hex Socket Cap Screw	M8x55	2
20	GB118-8X60	Pin	8x60	2
21	01-13	End Bracket		1
22	GB301-51104	Bearing	51104	2
23	TS-1524021	Socket Set Screw	M8x10	5
24	01-10	Collar		1
25	01-11	Lead Screw		1
26	GB879-5X35	Pin	5x35	1
27	01-16	Collar		1
28	01-15	Feed Shaft		1
29	01-38	Spring		3
30	GB308-SB6	Steel Ball	6	3
31	01-05	Clutch		1
32	TS-1540041	Hex Nut	M6	2
33	TS-1523061	Set Screw	M6x20	2
34	GB879-3X20	Pin	3x20	1
35	01-086/6	Control Fork		1
36	01-081/6	Control Handle		1
37	GB4141.14-BM10X50	Knob		1
38	TS-1503041	Hex Socket Cap Screw	M6x16	2
39	01-084/6	Control Bracket		1
40	01-082/6	Pin		1
41	01-38	Spring	1.2x6x20	1

Index No.	Part No.	Description	Size	Quantity
42	TS-1524011	Set Screw	M8x8	1
43	GB2089-3X35X70	Spring	3x35x70	1
44	01-085/6	Sleeve		1
45	GH1440W-01-21	Spindle Control Shaft		1
46	TS-1520021	Set Screw	M3x6	2
47	01-083/6	Key	5x56	1
48	TS-1523031	Set Screw	M6x10	1
49	01-26	Collar		1
50	GH1440W-01-22	Shift Collar		1
51	TS-1523051	Set Screw	M6x16	1
52	GB119-16X40	Pin	16x40	1
53	01-19	Pin		1
54	13-03	Index Ring		1
55	GB879-3X5	Pin	3x5	1
56	13-02	Shaft		1
57	GH1440W-13-01	Bracket		1
58	GB79-M6X12	Set Screw	M6x12	1
59	13-04	Plate		1
60	TS-1503041	Hex Socket Cap Screw	M6x16	2
61	05-74	Pin	5x37	1



# Stand Assembly

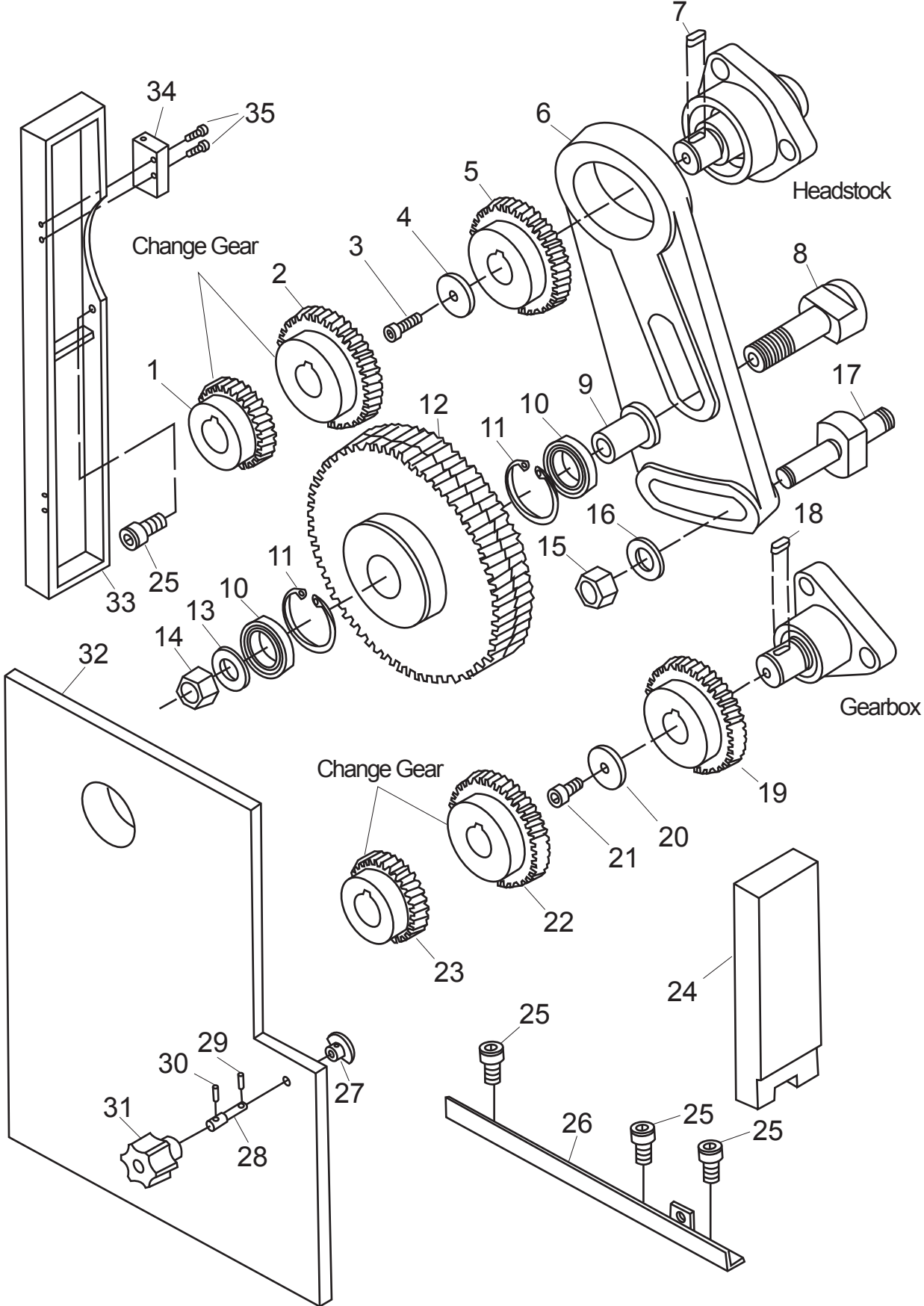


Stand Assembly

Index No.	Part No.	Description	Size	Quantity
1	GB818-M6X10	Pan Head Machine Screw	M6x10	3
2	GH1440W-01-23	Splash Guard		1
3	GH1440W-01-05	Chip Tray		1
4	GH1440W-01-07	Guide		2
5	GH1440W-01-06	Bracket		2
6	GB818-M6X10	Pan Head Machine Screw	M6x10	4
7	GH1440W-01-04	Pedestal (right)		1
8	TS-1503021	Hex Socket Cap Screw	M6x10	8
9	GH1440W-01-08	Bracket		2
10	GB818-M6X10	Pan Head Machine	M6x10	29
11	GH1440W-01-12	Brake Pedal		1
12	GH1440W-01-09	Front Plate		1
13	11-01	Shaft		1
14	GH1440W-01-13	Shaft		1
15	GB879-5X15	Pin	5x15	4
16	14-01	Coolant Tank		1
17	GH1440W-01-10	Cover		1
18	GH1440W-01-03	Pedestal (left)		1
19	11-04	Spring		1
20	GH1440W-01-14	Shaft		1
21	12-08	Switch Box		1
22	GB818-M6X10	Pan Head Machine Screw	M6x10	4
23	12-09	Switch Box Cover		1
24	GH1440W-01-15	Connector Bar (for 14")		1
	GH1340W-01-15	Connector Bar (for 13")		1
25	GB896-6	Retaining Clip	6	1
26	11-12	Pin		1
27	GB6172-M12	Hex Nut	M12	3
28	GB96-12	Washer	12	2
29	01-23	Screw		1
30	GHW-SB-30-1	Motor Mounting Bracket (for 1 phase motor)		1
	GHW-SB-30-3	Motor Mounting Bracket (for 3 phase motor)		1
31	01-25	Cover		1
32	01-27	Cover		4
33	GH1440W-01-11	Cover		1
34	TS-1524011	Set Screw	M8x8	3
35	GH1440W-01-20	Pulley		1
36	GH1440W-01-24	Link		1
37	11-07	Link Nut		1
38	11-05	Shaft Pin		1
39	GB896-6	Retaining Clip	6	1

Index No.	Part No.	Description	Size	Quantity
40	01-12	Tray		1
41	GHW-M1-1	Main Motor (1 phase)		1
	GHW-M1-3	Main Motor (3 phase)		1
42	TS-1550041	Washer	6	4
43	TS-1540041	Net Nut	M6	4

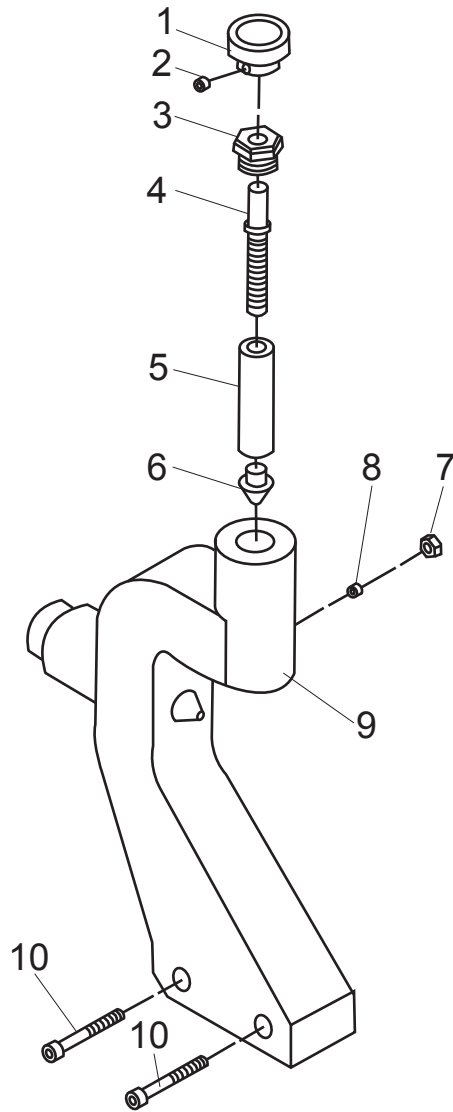
# End Gear Assembly



### End Gear Assembly

Index No.	Part No.	Description	Size	Quantity
1	15-02	Gear	30T	1
2	15-04	Gear	40T	1
3	TS-1502041	Hex Socket Cap Screw	M5x16	1
4	04-51	Washer		1
5	04-50	Gear	25T	1
6	GH1440W-15-01	Quadrant		1
7	GB1096-5X14	Key	5x14	1
8	05-43	Thread Shaft		1
9	05-45	Collar		1
10	BB-6103	Bearing	6103	2
11	GB893.1-35	Retaining Ring	35	2
12	05-65	Gear	120/127	1
13	05-44	Washer		1
14	TS-1540071	Hex Nut	M10	1
15	TS-1540081	Hex Nut	M12	1
16	GB97.2-85	Washer		1
17	GH1440W-15-20	Stud		1
18	GB1096-5X14	Key	5x14	1
19	05-41	Gear	50T	1
20	05-42	Washer		1
21	TS-1503041	Hex Socket Cap Screw	M6x16	1
22	15-03	Gear	32T	1
23	15-04	Gear	40T	1
24	GH1440W-01-17	Front Plate		1
	GH1340W-01-17	Front Plate (for 13")		1
25	TS-1504041	Hex Socket Cap Screw	M8x20	7
26	GH1440W-01-19	Plate		1
27	C6240-10002	Door Latch		1
28	C6240-10001	Shaft		1
29	GB879-4X18	Pin	4x18	1
30	GB879-4X24	Pin	4x24	1
31	GB4141.29A-85	Knob		1
32	GH1440W-01-16	Change Gear Cover (for 14")		1
	GH1340W-01-16	Change Gear Cover (for 13")		1
33	GH1440W-01-18	Rear Plate (for 14" modle)		1
	GH1340W-01-18	Rear Plate (for 13" modle)		1
34	C6240-10004	Plate		2
35	TS-1503021	Hex Socket Cap Screw	M6x10	4

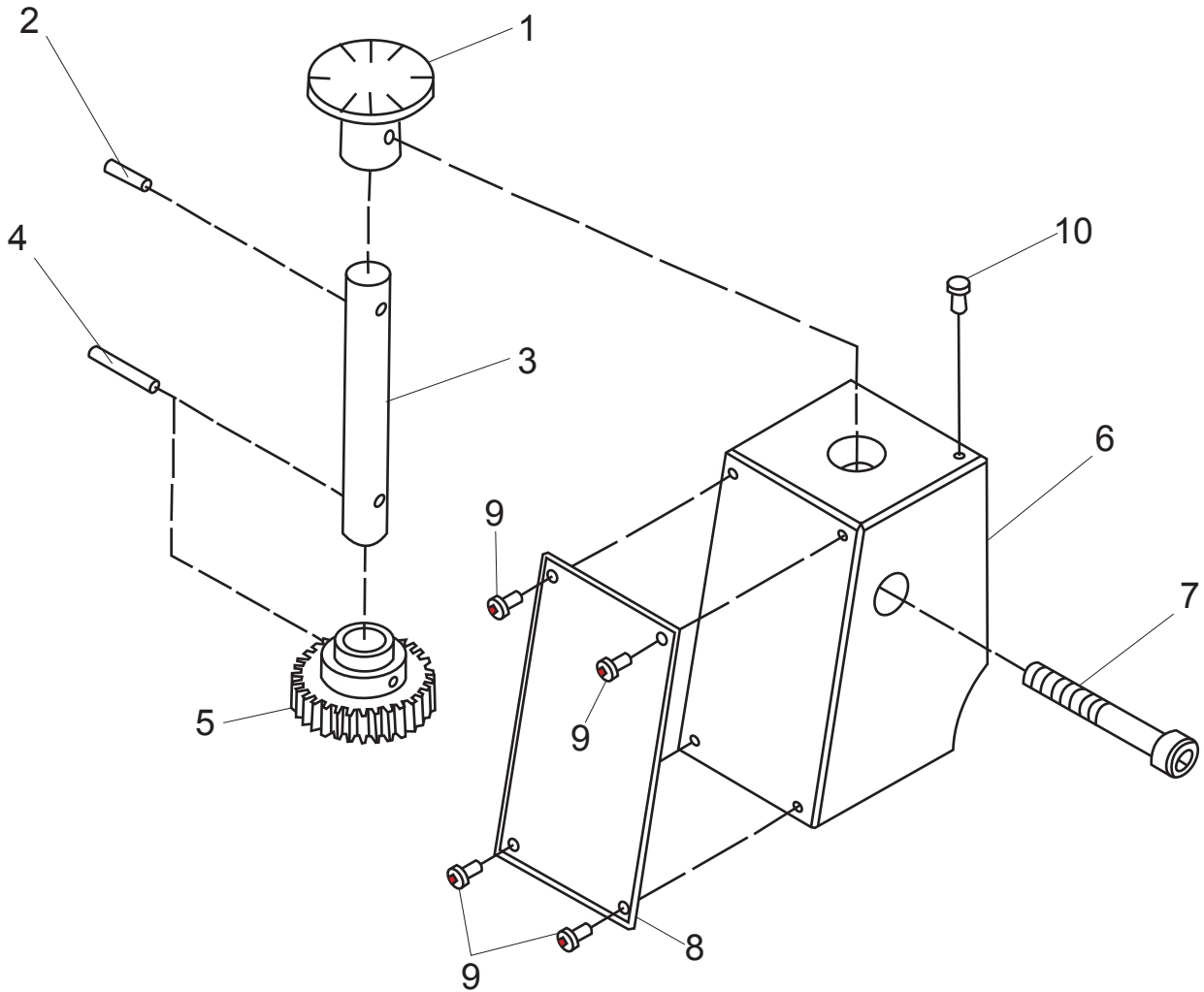
## Follow Rest



## Follow Rest

Index No.	Part No.	Description	Size	Quantity
1	GH1440W-09-02	Knob		2
2	TS-1523011	Set Screw	M6x6	2
3	10B-04	Bushing		2
4	10B-05	Screw		2
5	10B-02	Sleeve		2
6	10B-06	Brass Finger		2
7	TS-1540041	Hex Nut	M6	2
8	TS-1523011	Set Screw	M6x6	2
9	GH1440W-09-01	Body Casting		1
	GH1340W-09-01	Body Casting (for 13" model)		1
10	TS-1504121	Hex Socket Cap Screw	M8x60	2
	GH1440W-FR-CA	Follow Rest Complete Assembly (for 14")		1
	GH1340W-FR-CA	Follow Rest Complete Assembly (for 13")		1

## Thread Dial Assembly

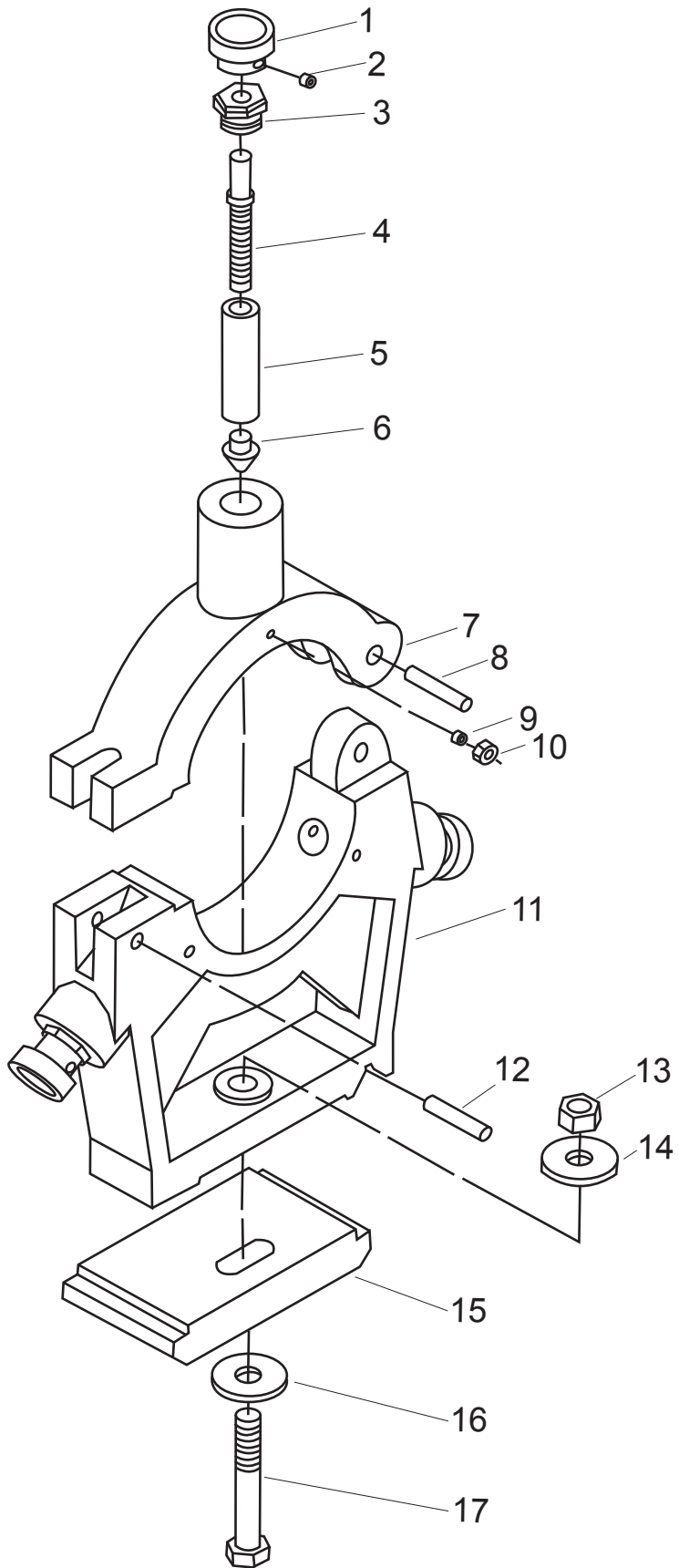


Thread Dial Assembly

Index No.	Part No.	Description	Size	Quantity
1	06-22	Dial		1
2	GB879-3x12	Pin	3x12	1
3	06-23	Shaft		1
4	GB879-3x20	Pin	3x20	1
5	06-25	Gear	32T	1
6	06-24	Body		1
7	TS-1503101	Hex Socket Cap Screw	M6x45	1
8	GHW-06-02	Name Plate		1
9	GHW-TD09	Pan Head Machine Screw	M3x6	4
10	GHW-TD10	Rivet	2x4	1
	GHW-TD-CA	Threading Dial Assembly		1



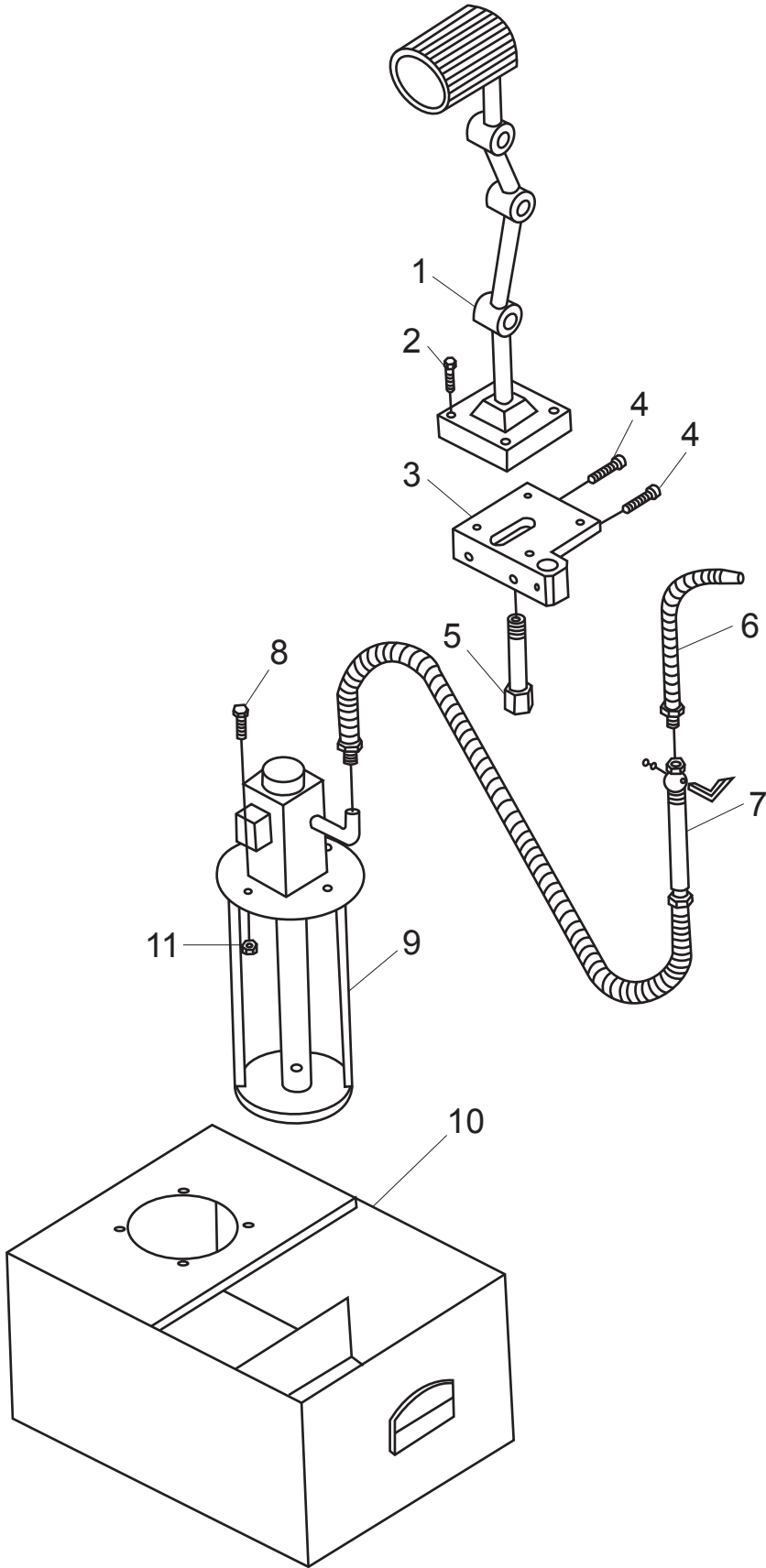
# Steady Rest



Steady Rest

Index No.	Part No.	Description	Size	Quantity
1	GH1440W-09-02	Knob		3
2	TS-1523011	Set Screw	M6x6	3
3	10A-05	Bushing		3
4	10A-06	Screw		3
5	10A-07	Sleeve		3
6	10A-08	Brass Finger		3
7	10A-03	Upper Body Casting		1
8	GB119-8X40	Pin	8x40	1
9	TS-1523061	Set Screw	M6x20	3
10	TS-1540041	Hex Nut	M6	3
11	GH1440W-10-01	Lower Body Casting		1
	GH1340W-10-01	lower Body Casting (for 13")		1
12	10A-02	Lock Pin		1
13	TS-1540081	Hex Nut	M12	1
14	TS-1550081	Flat Washer		1
15	GH1440W-10-02	Clamp Plate		1
16	TS-1550081	Flat Washer	12	1
17	TS-1492081	Hex Cap Bolt	M12x80	1
	GH1440W-SR-CA	Steady Rest Complete Assembly(for 14")		1
	GH1340W-SR-CA	Steady Rest Complete Assembly(for 13")		1

# Coolant and Work Light Assembly



Coolant and Work Light Assembly

Index No.	Part No.	Description	Size	Quantity
1	JC38	Work Light **		1
2	GHW-CW02	Cross Head Screw **	M6x14	4
3	14-03	Lamp Bracket **		1
4	TS-1503051	Hex Socket Cap Screw**	M6x20	2
5	14-04	Connected Tube**		1
6	GHW-CW06	Coolant Device		1
7	GHW-CW07	Rubber Tube		1
8	GHW-CW08	Hex Cap Bolt	M5x25	4
9	GHW-M2-1	Coolant Pump(1 phase)	1/8HP	1
	GHW-M2-3	Coolant Pump(3 phase)	1/8HP	1
10	14-01	Water Tank		1
11	TS-1540031	Nut	M5	4
	GHW-WL-CA	Work Light Complete Assembly (includes#1-5)		1