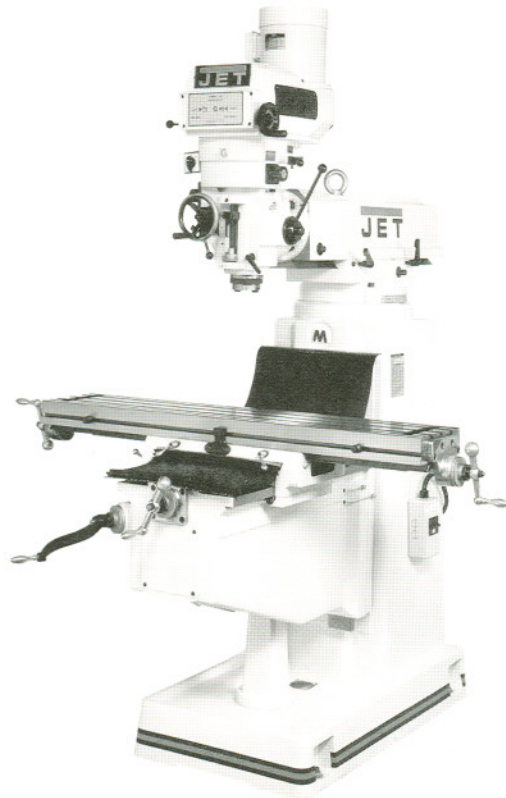


# **JET**

**EQUIPMENT & TOOLS**

## **OWNER'S MANUAL**

### **JTM-1055 Variable Speed Vertical Mill**



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**M-690055 2/01**

# Important Information

**1-YEAR  
LIMITED WARRANTY**

**JET offers a one-year limited  
warranty on this product**

## REPLACEMENT PARTS

Replacement parts for this tool are available directly from JET Equipment & Tools. To place an order, call 1-800-274-6848. Please have the following information ready:

1. Visa, MasterCard, or Discover Card number
2. Expiration date
3. Part number listed within this manual
4. Shipping address other than a Post Office box.

## REPLACEMENT PART WARRANTY

JET Equipment & Tools makes every effort to assure that parts meet high quality and durability standards and warrants to the original retail consumer/purchaser of our parts that each such part(s) to be free from defects in materials and workmanship for a period of thirty (30) days from the date of purchase.

## PROOF OF PURCHASE

Please retain your dated sales receipt as proof of purchase to validate the warranty period.

## LIMITED TOOL AND EQUIPMENT WARRANTY

JET makes every effort to assure that its products meet high quality and durability standards and warrants to the original retail consumer/purchaser of our products that each product be free from defects in materials and workmanship as follows: 1 YEAR LIMITED WARRANTY ON THIS JET PRODUCT. Warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities or to a lack of maintenance. JET LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD SPECIFIED ABOVE FROM THE DATE THE PRODUCT WAS PURCHASED AT RETAIL. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG THE IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. JET SHALL IN NO EVENT BE LIABLE FOR DEATH, INJURIES TO PERSONS OR PROPERTY OR FOR INCIDENTAL, CONTINGENT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF OUR PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. To take advantage of this warranty, the product or part must be returned for examination, postage prepaid, to an authorized service station designated by our Auburn office. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection discloses a defect, JET will either repair or replace the product or refund the purchase price, if we cannot readily and quickly provide a repair or replacement, if you are willing to accept such refund. JET will return repaired product or replacement at JET's expense, but if it is determined there is no defect, or that the defect resulted from causes not within the scope of JET's warranty, then the user must bear the cost of storing and returning the product. This warranty gives you specific legal rights, and you have other rights, which vary, from state to state.

**JET Equipment & Tools • P.O. Box 1349, Auburn, WA 98071-1349 • (253) 351-6000**

## **WARNING**

1. **Read and understand the entire instruction manual before attempting set-up or operation of this machine.**
2. Always wear approved safety glasses/face shields while using this machine.
3. Make certain the machine is properly grounded.
4. 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.
5. Keep the floor around the machine clean and free of scrap material, oil and grease.
6. 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.
7. Do **not** over reach. Maintain a balanced stance at all times so that you do not fall or lean against moving parts.
8. Make all machine adjustments or maintenance with the machine unplugged from the power source.
9. Use the right tool. Don't force a tool or attachment to do a job which it was not designed for.
10. Replace warning labels if they become obscured or removed.
11. Make certain the main switch is in the **OFF** position before connecting the machine to the power supply.
12. Give your work undivided attention. Looking around, carrying on a conversation, and "horse-play" are careless acts that can result in serious injury.
13. Keep visitors a safe distance from the work area.
14. Use recommended accessories; improper accessories may be hazardous.
15. Keep hands away from all moving parts (belts, cutters, gears, etc.).
16. Never operate this machine under the influence of alcohol or drugs.
17. Some coolants used for machining contain chemicals that may be hazardous to your health if not used properly. Read and understand all user information listed on the coolant container and protect yourself accordingly.
18. Read and understand all warnings posted on the machine.
19. This manual is intended to familiarize you with the technical aspects of this milling machine. It is not, nor was it intended to be, a training manual.
20. 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 milling machines, do not use this machine until proper training and knowledge has been obtained.
21. Failure to comply with all of these warnings may cause serious injury.
22. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
  - Lead from lead based paint
  - crystalline silica from bricks and cement and other masonry products, and
  - arsenic and chromium from chemically-treated lumber.
23. Your risk from those exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specifically designed to filter out microscopic particles

## Specifications

**JTM-1055**

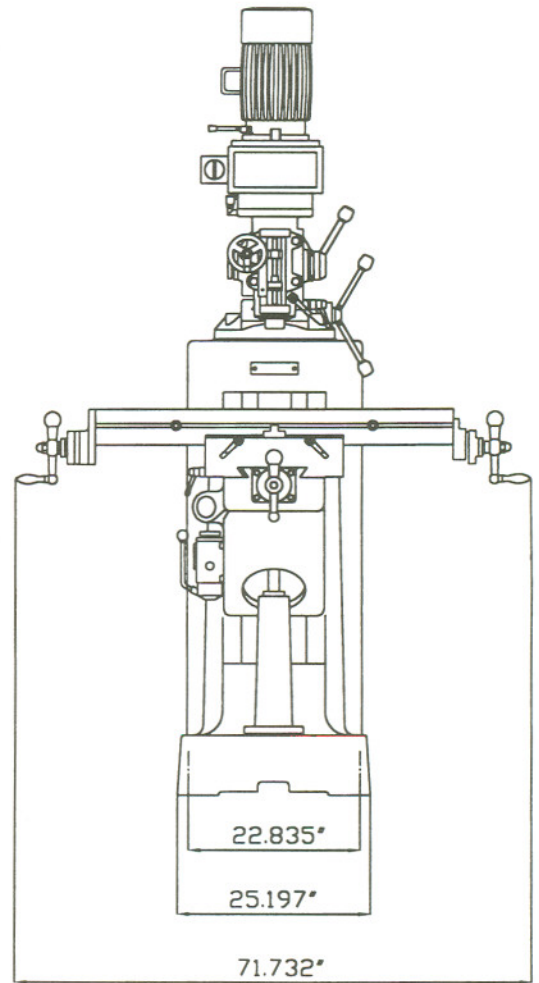
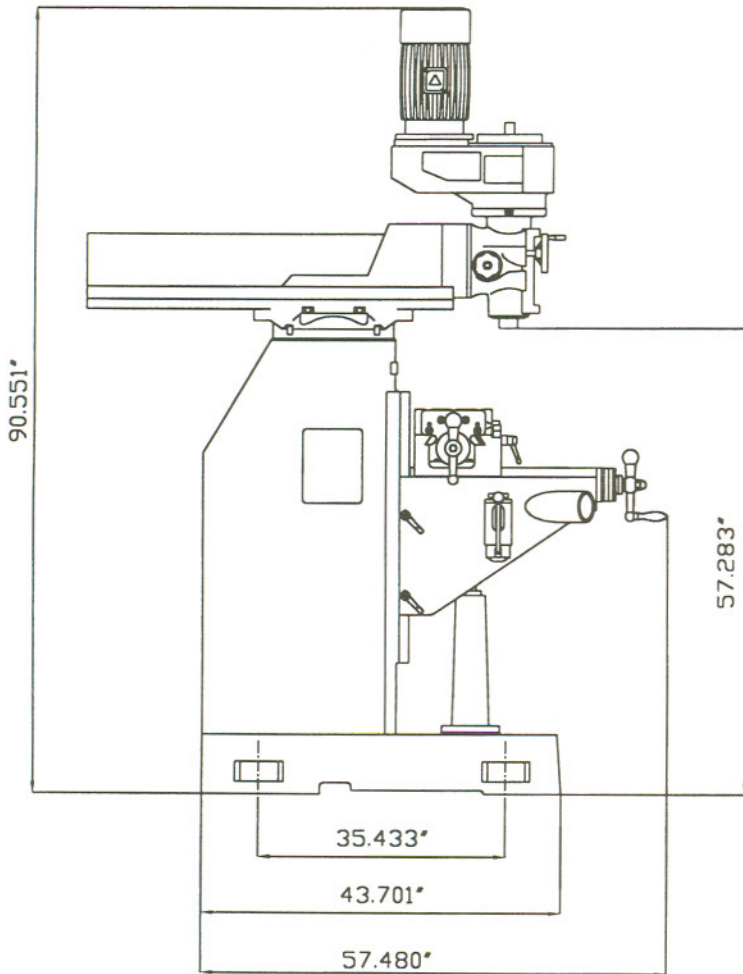
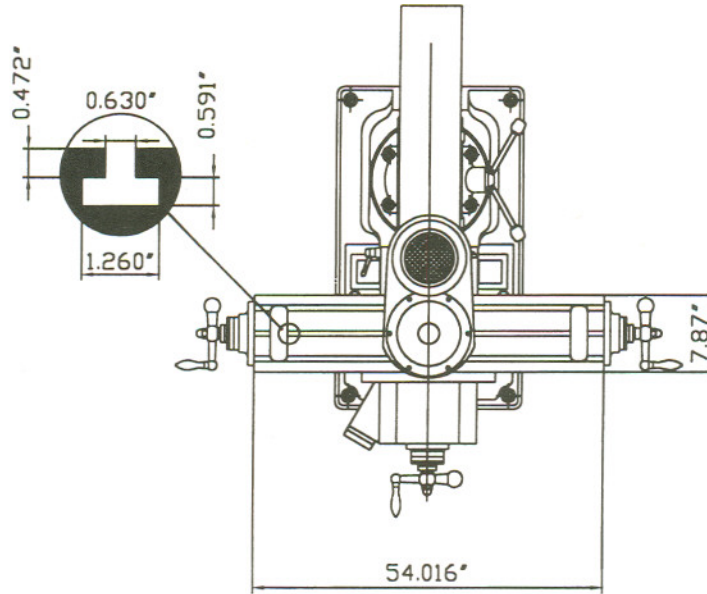
Stock Number .....	690055
Spindle Taper.....	NST#40
Diameter of Quill .....	4 1/8"
Number of Spindle Speeds.....	Variable
Range of Spindle Speeds .....	80 to 3800 RPM
Downfeeds per Revolution of Spindle.....	0.0015", 0.003", 0.006"
Spindle Travel.....	5"
Head Movement.....	90° L and R
Turret Rotation.....	360°
Maximum Distance Spindle to Table .....	20"
Maximum Distance Spindle to Column.....	21-5/8"
Collet Capacity.....	1/8"-7/8"
Table Size.....	10" x 54"
Longitudinal Table Travel.....	38"
Table Cross Travel .....	17"
Number of T-Slots.....	3
Size and Spacing of T-Slots.....	5/8" x 2-1/2"
Maximum Table Load .....	800 lbs.
Knee Travel.....	17-1/2"
Overarm Travel.....	16-1/2"
Overall Dimensions.....	108"W x 80"D x 92"H
Motor.....	5 HP, 3Ph., 230/460V <b>prewired 230 Volt</b>
Net Weight (approx.).....	3,300 Lbs.

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The specifications in this manual are given as general information and are not binding. JET Equipment & Tools reserves the right to effect, at any time and without prior notice, changes or alterations to parts, fittings, and accessory equipment deemed necessary for any reason whatsoever.

# JTM-1055 Layout



## Shipping Container Contents

- 1 Mill
- 1 Flat Way Cover (rear)
- 1 Accordion Way Cover (front)
- 1 Elevating Crank
- 1 Quill Handle
- 1 Drawbar
- 1 Pin & Nut
- 1 Toolbox: *found in base through rear cover*
  - 1 Hex Wrench Set (1.5-10mm)
  - 1 12" Combination Wrench Set
  - 1 17-19mm Box Wrench
  - 1 14-17mm Box Wrench
  - 1 10-12mm Box Wrench
  - 1 22-24mm Open Wrench
  - 1 17-19mm Open Wrench
  - 1 #2 Cross Point Screw Driver
  - 1 #2 Flat Blade Screw Driver
  - 1 Plastic Oil Can
  - 1 Painting Can
  - 1 Owner's Manual
  - 1 Warranty Card
  - 1 Eye Bolt
  - 3 Handles
  - 4 Leveling Bolts
  - 4 Leveling Pads

## Unpacking and Clean-Up

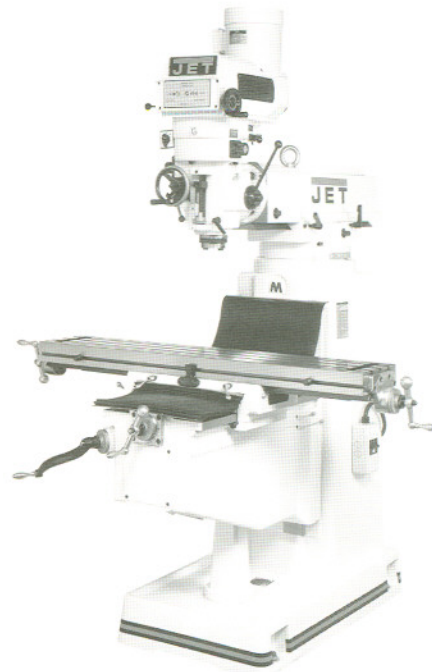
1. Finish removing the crate. Leave the mill bolted to the pallet until it is ready to be moved to its final location.
2. Remove the toolbox from the base. It is accessed by removing four screws that hold the rear cover in place.
3. Clean all rust protected surfaces with kerosene, or a light solvent. Do not use gasoline, paint thinner, or lacquer thinner. These will damage painted surfaces.
4. Cover all machined surfaces with a film of light machine tool oil to inhibit rust.

## Site Preparation

**⚠ CAUTION**  
**Mill must be supported equally under all four corners. Failure to comply may cause the column to twist and put a bind in the bedways.**

The mill must be placed on an even surface, bolted to the floor, or placed on the leveling pads. Choose a location for the mill that is dry, has

good lighting, and has enough room to be able to service the mill on all four sides. Review the JTM-1055 Layout on page 5.



## Lifting the Mill

1. Remove the four nuts that hold the unit to the pallet.
2. Raise the head by loosening four nuts, (A, Fig. 1) with a 22mm wrench, just enough to allow the head to raise into position. **Do not** remove the nuts; just break the nuts loose.
3. Turn the hex head of the worm shaft (B, Fig. 2) using a 19mm socket and breaker bar. Raise the head aligning the zero marks on the scales. With the help of another person support the head while it is raising.
4. Tighten the four bolts (A, Fig. 1).
5. Loosen the two ram locking handles (C, Fig. 1) and move the ram forward by turning the hex head of the ram pinion (D, Fig. 1) with a 19mm socket and breaker bar.
6. Tighten the ram locking handles before lifting.

The preferred method for lifting the mill is with a hook through the eye bolt in the ram (E, Fig. 1). Make sure the chain and hook are properly rated for the weight of the mill. Make sure the chain is not twisted and lift slowly. Make sure the mill is balanced before moving

Carefully move the mill over the site. Lower the mill over the anchor bolts, or leveling pads. The leveling pads included in the toolbox and the leveling screws will help you to reach a level position. Check the mill for level with a machinist's level placed on the table. Mill must be level back to front and side to side. Shim if necessary when bolting to the floor, but remember that the mill must be supported equally at all four corners. Check for level before tightening the anchor bolt nuts and after tightening them. Adjust as necessary.

## Electrical Connections

### **WARNING**

**All electrical connections must be made by a qualified electrician!**  
**Failure to comply may cause serious injury!**

The JTM-1055 mill is rated at 230/460V, 3Ph and comes from the factory **prewired at 230V**.

Confirm power at the site matches power requirements of the mill before connecting to the power source. The power source should be

dedicated to the JTM-1055 mill. The main power switch is located on the right side of the machine. Remove the cover, and run the main power cable through the box and attach the ground, followed by power leads. Replace the cover.

Check for proper spindle rotation in the high speed range. The spindle should rotate clockwise when viewed from the top of the machine. If the spindle rotates counter-clockwise, disconnect from the power source, and switch two of the power leads.

To change from 230V to 460V operation, remove the junction box cover on the motor, and change the wires according to the diagram found on the inside of the cover. Also see the wiring diagram.

The mill must be properly grounded.



Fig. 1

## Lubrication

### **⚠ CAUTION**

**Do not operate the mill before lubricating the machine fully. Failure to comply may cause damage to the machine.**

1. Spindle Bearings & Quill (A, Fig. 2)- fill oil cups once daily with Mobil DTE® Oil Light.
2. Oil Pump (B, Fig. 2)- fill reservoir as needed by removing cap on top of tank and filling with Mobil DTE® Oil Light. Pump oil with release handle daily. Way surfaces and leadscrews are lubricated in this manner.
3. Grease Fitting for Spindle Gear (not shown): located on the backside of the head's lower housing. Lubricate every month using Mobilith AW2.

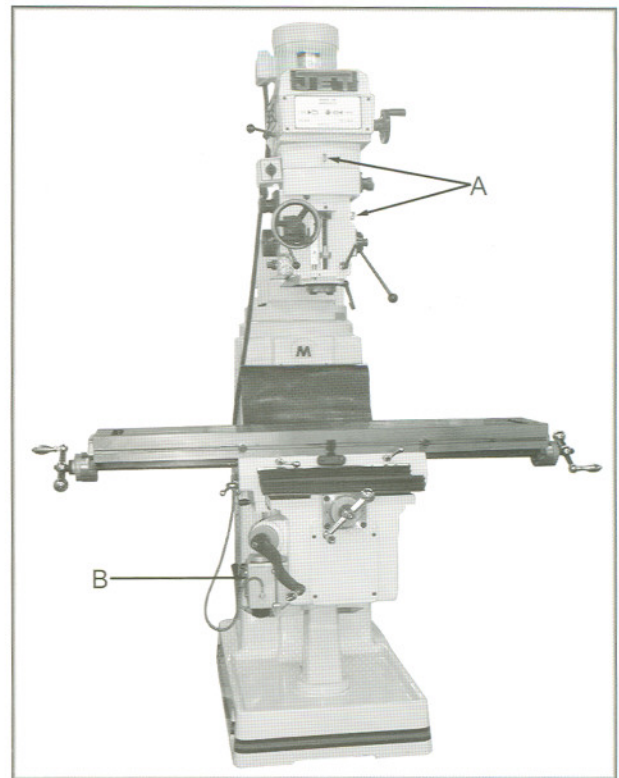


Fig. 2

## Controls

- A. **Variable Speed Control** (A, Fig. 3) - located on the right side of the head assembly. Turn clockwise or counter-clockwise to adjust spindle speed.  
**CAUTION:** change speed only when spindle is turning.
- B. **Variable Speed Dial Indicator** (B, Fig. 3) - located on the front of the head assembly. Indicates selected speed in high, or low range.
- C. **Spindle Brake** (C, Fig. 3) - located on left side of the head. Move in either direction to stop spindle once power has been turned off.

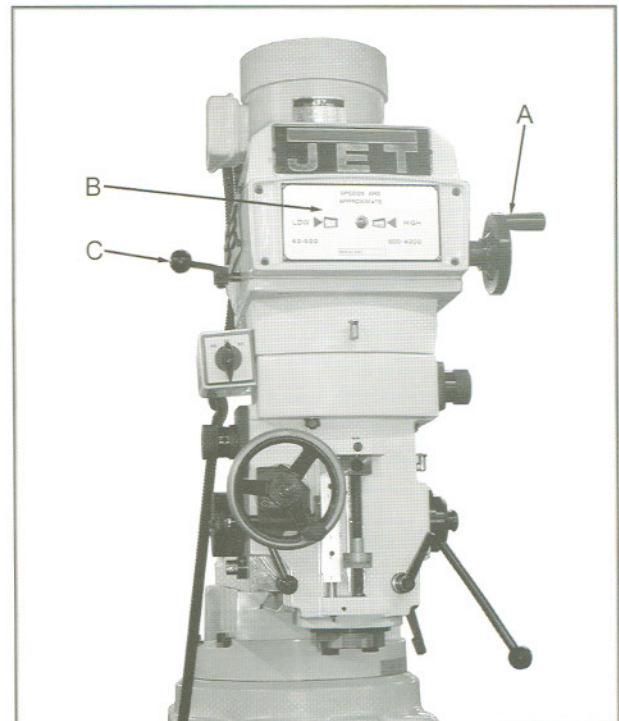


Fig. 3

- D. **High-Neutral-Low Lever** (D, Fig. 4) - located on the right side of the head. The photo shows the lever in the low speed range. Push the lever in and rotate 90° clockwise for neutral. Rotate the lever another 90° for the high speed range.

**CAUTION:** Do not shift High-Low Gear while motor is running. Rotate the spindle by hand to facilitate changing lever positions.

- E. **Power Feed Transmission Engagement Knob** (E, Fig. 4) - located on right side of head. When pointer indicates towards the rear of the machine, power feed worm gear is engaged. To disengage power feed, turn so pointer indicates towards the front of the machine.

**CAUTION:** Power feed may be engaged when spindle is rotating, however, it must be engaged gently to avoid damage to the worm gear.

- Do not use power feed at speeds above 2700 R.P.M.
- It is recommended that the power feed worm gear be disengaged whenever the power feed is not required. This avoids unnecessary wear on the worm gear.
- Maximum loading is a 3/8" (9.5mm) diameter bit for drilling in steel. Use manual feed for bits larger than 3/8".

- F. **Quill Feed Handle** (F, Fig. 4) - located on right side of head. Rotate counter-clockwise to lower spindle.

- G. **Quill Lock** (G, Fig. 4) - located on the right side of the head. Rotate the handle clockwise to lock the quill in a desired position. Rotate the handle counter-clockwise to release.

- H. **Micro Adjusting Nut** (H, Fig. 4), - located on the front of the head. Use for setting specific spindle depth.

**Note:** One complete rotation of the micro nut equals 0.05".

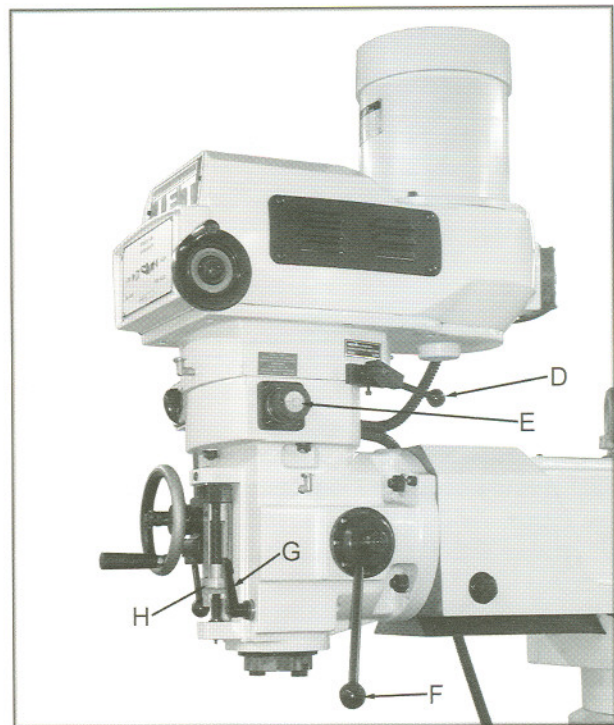


Fig. 4

I. **Feed Control Lever** (I, Fig. 5) - located on the left side of the head. Engages overload clutch on pinion shaft when the lever is positioned to the left. Stays engaged until quill stop comes in contact with micro adjusting nut (forcing feed control lever to drop out automatically), or until lever is released manually by positioning lever to the right.

J. **Manual Feed** (J, Fig. 5) - located on the left front of the head. Feed reversing knob (K, Fig. 5) must be in the neutral position. The feed control lever (I, Fig. 5) must be engaged. **Note:** manual feed handle and handwheel may be taken off when not in use.

K. **Feed Reversing Knob** (K, Fig. 5) - located in center of manual feed handwheel. Position of the knob depends upon the direction of spindle rotation. If boring with right hand cutting tools, pull feed knob towards operator until clutch becomes engaged. Neutral position is between forward and reverse position.

**CAUTION:** It is recommended that the knob be left in the neutral position when not in use.

L. **Quill Stop** (L, Fig. 6) - located on the front of head. Used to disengage the automatic feed in either direction as well as the setting point for working to a given depth.

M. **Quill Feed Speed Selector** (M, Fig. 6) - located on the left side of the head. Turn the knob and indicate pointer towards one of three feed speeds (0.0015", 0.003", and 0.006") per spindle revolution. Feed is more readily engaged when spindle is turning.

N. **Reversing Switch** (N, Fig. 6) - located on the left side of the head. Switches rotation of spindle.

O. **Drawbar** (O, Fig. 6) - located on the top of the head. Used to secure the tool holder in the taper. Use the spindle brake while tightening the drawbar.

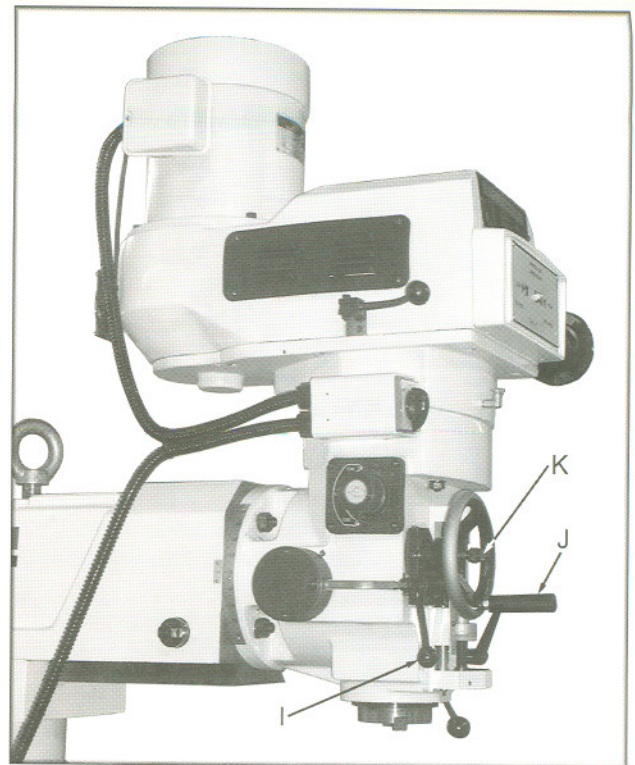


Fig. 5

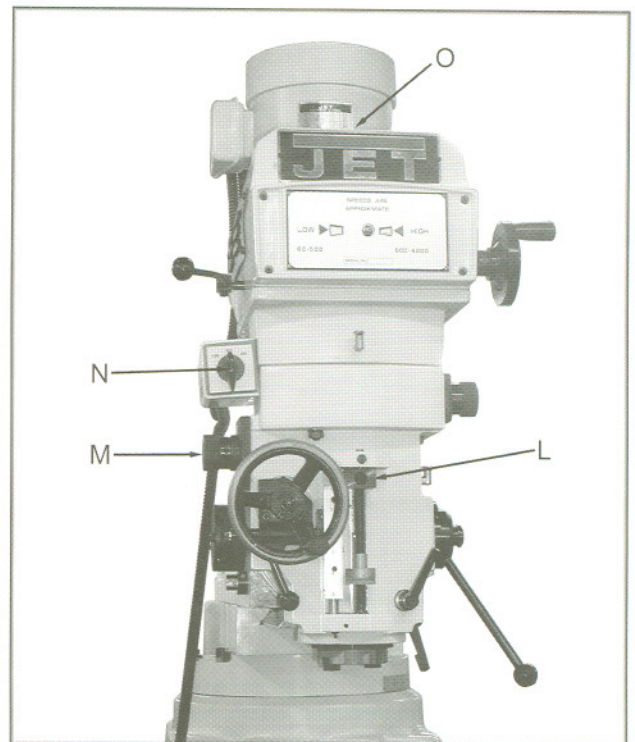


Fig. 6

## Operating Precautions

- Do not attempt to change spindle RPM while motor is stopped.
- Be certain the spindle brake is released before starting the motor.
- Rotate the spindle by hand to facilitate meshing of the clutch and gears.
- Do **not** use the quill power feed at speeds above 2700 RPM.
- It is recommended that the power feed worm gear be disengaged whenever the power feed is not required. This will avoid unnecessary wear on the worm gear.
- Maximum loading is a 3/8" (9.5mm) diameter bit for drilling in steel. Use manual feed for bits larger than 3/8".
- Overload clutch is factory set to hold up to 200 lbs. down feed pressure on the quill (accommodates drills up to 3/8"). Do **not** attempt to adjust clutch pressure.
- Only change spindle speeds while the motor is running.

## Changing Speed Range

To change from high to low speed range, move lever (A, Fig. 7) by pressing in and rotating almost 180°. Do not change gears while the spindle is running.

**CAUTION:** It is recommended to rotate the spindle by hand to ensure the clutch is engaged prior to turning on. Do not turn on the machine unless the spindle can be moved freely.

## Manual Fine Feed (handwheel)

1. Disengage automatic feed by turning knob (B, Fig. 7) so that the pointer indicates towards the front of the machine.
2. Locate the feed reversing knob (C, Fig. 7) in the center or neutral position.
3. Engage feed trip lever (D, Fig. 7) by pulling away from the head assembly.
4. The quill can now be moved up or down by turning the hand wheel.

## Manual Rapid Feed (handle)

1. Disengage automatic feed by turning knob (B, Fig. 7) so that the pointer indicates towards the front of the machine.
2. Locate the feed reversing knob (C, Fig. 7) in the center or neutral position.
3. Disengage feed trip lever (D, Fig. 7) by pushing towards head assembly.
4. Engage the manual quill handle (E, Fig. 7) and push, or pull to raise, or lower the quill.

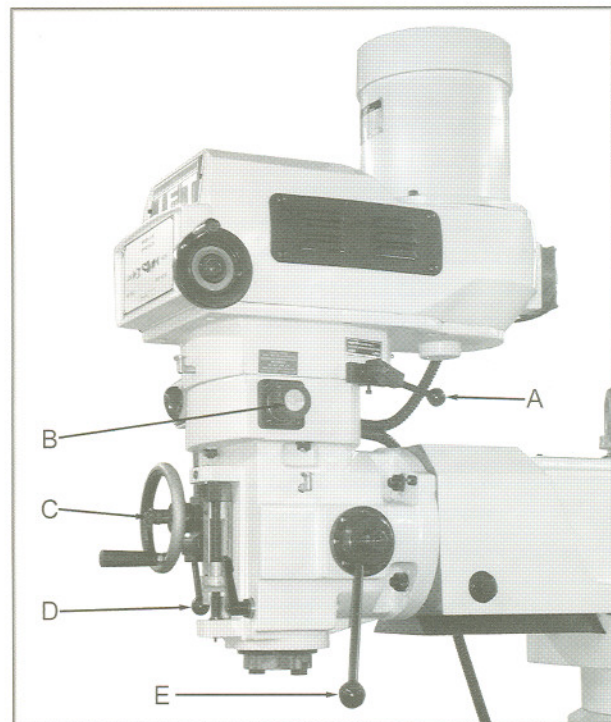


Fig. 7

## Micro Adjusting Nuts for Manual Feed

1. Lower the quill to the required depth.
2. Tighten the quill lock (A, Fig. 9).
3. Screw the micro nut (B, Fig. 9) against the quill stop (C, Fig. 9), and tighten the micro jam nut (D, Fig. 9).
4. Loosen the quill lock.
5. Use rapid, or fine manual downfeed.  
**Note:** Always make a test cut to verify that the depth of cut is correct.

## Setting Up for Automatic Feed

1. Ensure quill lock (A, Fig. 8) is off by rotating counter-clockwise.
2. Set micrometer dial (B, Fig. 8) to desired depth.
3. Engage auto quill feed knob (C, Fig. 8) by turning so pointer indicates towards the rear of the machine.
4. Select feed direction by pulling or pushing the knob (D, Fig. 8) for up/down feed, neutral is in the middle.
5. Select feed rate from feed selector knob (E, Fig. 8) 0.0015", 0.003", and 0.006" per spindle revolution. It is easier to change feed rate while the spindle is turning.
6. Engage feed trip lever (F, Fig. 8) by pulling away from head assembly.

**CAUTION:** Power feed may be engaged when spindle is rotating, however, it must be engaged gently to avoid damage to the worm gear.

- Do not use power feed at speeds above 2700 R.P.M.
- It is recommended that the power feed worm gear be disengaged whenever the power feed is not required.
- Maximum loading is a 3/8" (9.5mm) diameter bit for drilling in steel. Use manual feed for bits larger than 3/8".

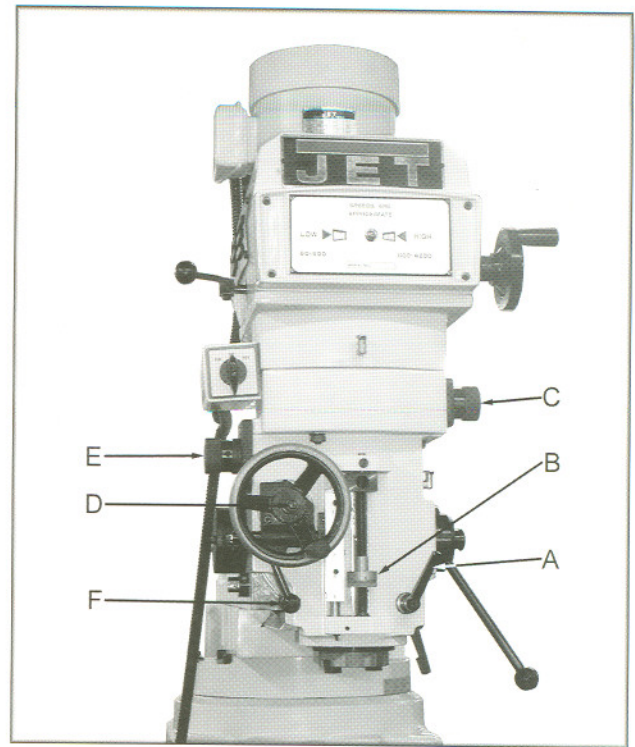


Fig. 8

## Micro Adjusting Nuts for Auto Feed

1. Lower the quill to the required depth.
2. Tighten the quill lock (A, Fig. 9).
3. Screw the micro nut (B, Fig. 9) against the quill stop (C, Fig. 9), and tighten the micro jam nut (D, Fig. 9).
4. Loosen the quill lock, and engage the power feed knob (E, Fig. 9).
5. Choose the downfeed rate (F, Fig. 9).
6. Engage the feed reversing knob (G, Fig. 9).
7. Engage the feed trip lever (H, Fig. 9).

**Note:** Always make a test cut to verify that the depth of cut is correct.

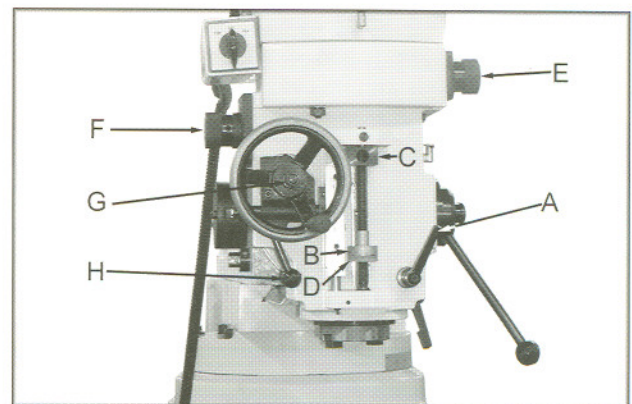


Fig. 9

## Head Alignment

The quill housing, and ram were pinned at the factory. The pin has been removed for shipping. The pin can be found in the toolbox.

1. Loosen four nuts (A, Fig. 10) with a 22mm wrench, just enough to allow the head to pivot into position. **Do not** remove the nuts; just break the nuts loose.
2. Back off the nut so it is flush with the end of the pin. This will allow you to tighten the nut and remove the pin if needed.
3. Gently tap the pin into the hole while slightly rocking the hex head of the worm shaft (C, Fig. 10) back and forth.

The scales on the mill are guides only. Close tolerance work will require the use of a dial indicator to make sure the head is 90° to the table in the X and Y axis. Please note the table is fitted to be slightly higher in the front, usually about .0005".

## Pivoting the Head

1. Remove the pin (B, Fig. 10) by tightening the nut.
2. Loosen four nuts, (A, Fig. 10) with a 22mm wrench, just enough to allow the head to move into position. **Do not** remove the nuts; just break the nuts loose.
3. Turn the hex head of the worm shaft (C, Fig. 10) using a 19mm socket and breaker bar. Pivot the head aligning the scale marks to the desired angle.
4. Tighten the four bolts (A, Fig. 10).  
**Note:** Always make a test cut to verify that the angle of cut is correct.

## Pivot the Ram

1. Loosen four bolts, (A, Fig. 11) with a 21mm wrench.
2. Remove the pin (B, Fig. 11) by tightening the nut.
3. Pivot the head and ram assembly to the **required angle and tighten four bolts.**

## Moving the Ram

1. Loosen two ram locking handles (A, Fig. 12).
2. Move the ram by turning the hex head of the ram pinion (B, Fig. 12) with a 19mm socket and breaker bar.

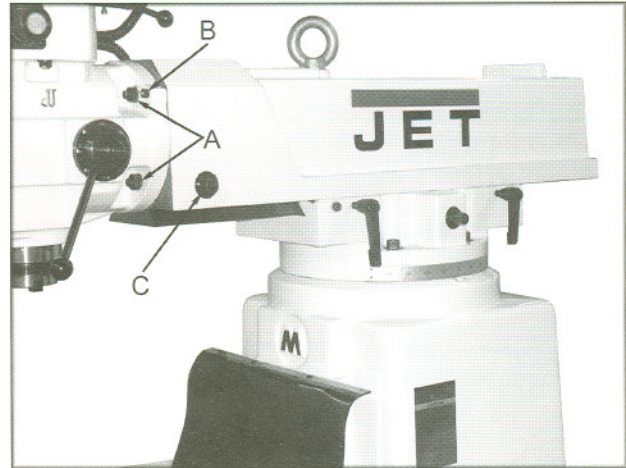


Fig. 10

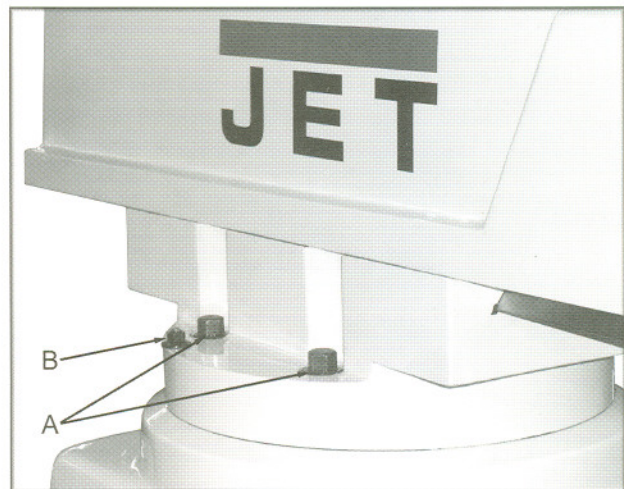


Fig. 11

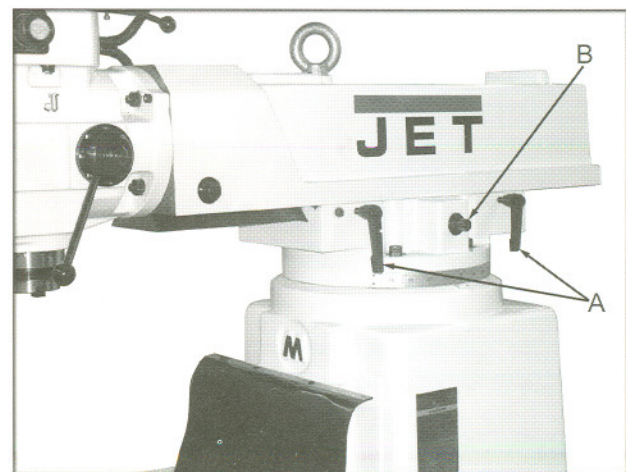


Fig. 12

## Table Movement

- A. **Longitudinal Movement** (A, Fig. 13) - handles located on opposite ends of the table; controls the X-axis.
- B. **Stops** (B, Fig. 13) - located on the front of the table; controls how far the table travels in either direction.
- C. **Table Locks** (C, Fig. 13) - located on the front of the saddle used for locking the table in position.
- D. **Cross Feed Movement** (D, Fig. 13) - located on the front of the knee; controls the Y-axis.
- E. **Knee Handle** (E, Fig. 13) - located on the corner of the knee; controls the Z-axis.

## JTM-1055 Maintenance

### **WARNING**

Always disconnect the machine from the power source before doing any maintenance. If you do not have the knowledge or the training to complete the maintenance have an authorized JET repair station maintain your mill. Failure to comply may cause serious bodily injury!

## Feed Trip Adjustment

1. Loosen lock nut (A, Fig. 14).
2. Engage trip handle (C, Fig. 14) by pulling away from head assembly.
3. Adjust micro nuts (E, Fig. 14) against quill stop (B, Fig. 14).
4. Slowly turn adjusting screw (D, Fig. 14) until lever (C, Fig. 14) trips.
5. Tighten lock nut (A, Fig. 14)

## Knee Gib Adjustment

**Note:** when adjusting the gibs for the knee, the saddle, and the table always start with the knee first, the saddle second, and adjust the table last.

Adjust three gibs located between the knee and the base. Use a dial indicator to measure the

amount of movement in the knee. Adjust the gib until the indicator reading is within 0.003".

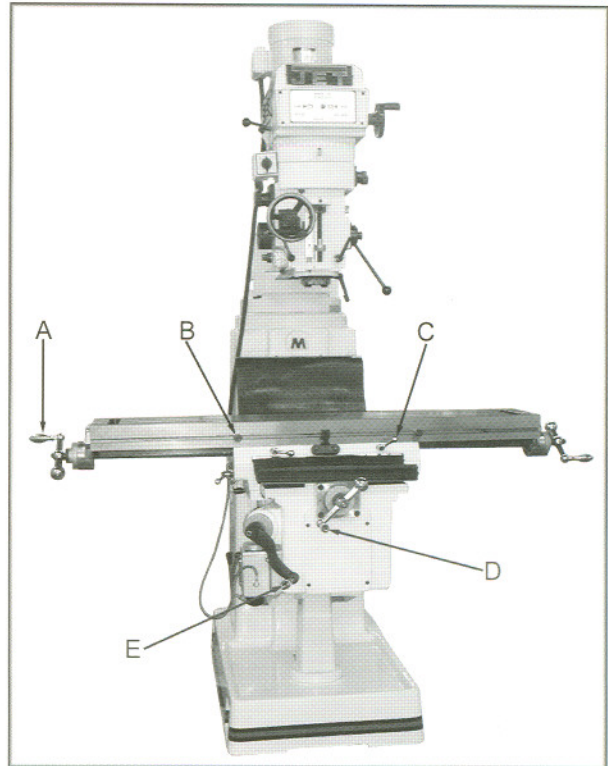


Fig. 13

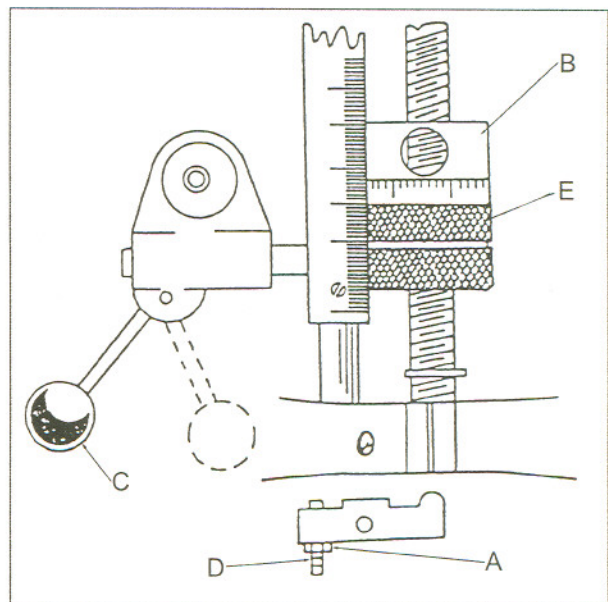


Fig. 14

### Saddle Gib Adjustment

Adjust two gibs located between the saddle and the knee. Use a dial indicator to measure the amount of movement in the saddle. Adjust the gib until the indicator reading is within 0.003".

### Table Gib Adjustment

Adjust one gib located between the table and the saddle. Use a dial indicator to measure the amount of movement in the table. Adjust the gib until the indicator reading is within 0.003".

### Ram Ware Plate Adjustment

Adjust one ware plate located between the ram and the turret. Use a dial indicator to measure the amount of movement in the ram. Adjust the ware plate until the indicator reading is within 0.003".

### Removing the Motor

1. Adjust the head to the highest speed.
2. Disconnect the machine from the power source.
3. Remove three screws (A, Fig. 15) and plate (B, Fig. 15).
4. Use two screws (A-1, Fig. 15) to compress the spring (C, Fig. 15).
5. Rotate the high-neutral-low lever to the high speed range.
6. Remove the reversing switch from the belt housing.
7. Remove the four screws (D, Fig. 15).
8. Lift and tilt the motor so that it rests on stud (E, Fig. 15).
9. Ease the belt over the lower drive disc and remove the motor.

### Timing Belt Replacement

1. Disconnect the machine from the power source.
2. Remove the motor and the draw bar.
3. Lower the quill to the full extent.

4. Remove the four screws from the lower housing cover. (Index No.23-1 on page 17).
5. Remove the lower housing cover assembly (Index No.23 on page 17) and tap to clear dowels.
6. Replace the belt.(Index No.47 on page 17).

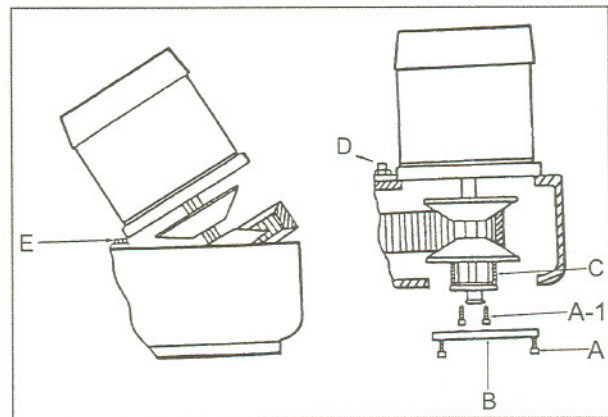


Fig. 15

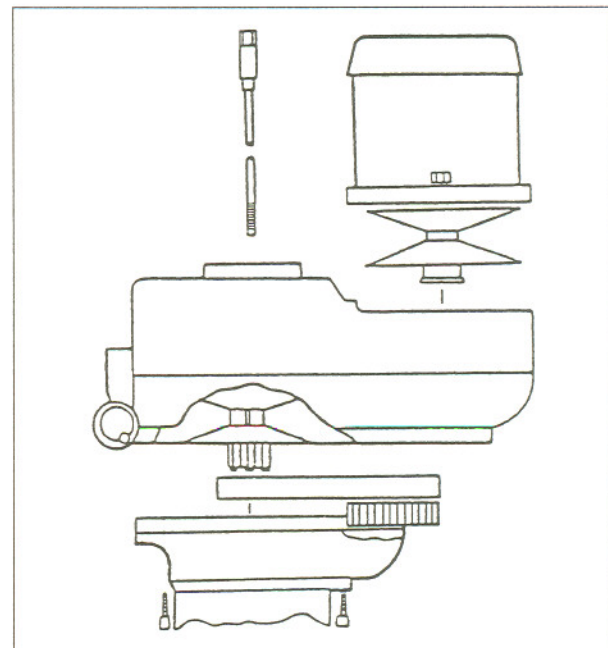


Fig. 16

### Drive Belt Replacement

1. Disconnect the machine from the power source.
2. Remove the motor.
3. Remove the three screws (A, Fig. 17). Thread the screws into the adjacent tapped holes and back off the cover (B, Fig. 17).
4. Remove the two screws and bushings (C, Fig. 17) from the tilting plate.
5. Remove six screws from the variable speed housing (E, Fig. 17).
6. Remove the top housing (F, Fig. 17) and tap to clear dowels.
7. Replace the belt.

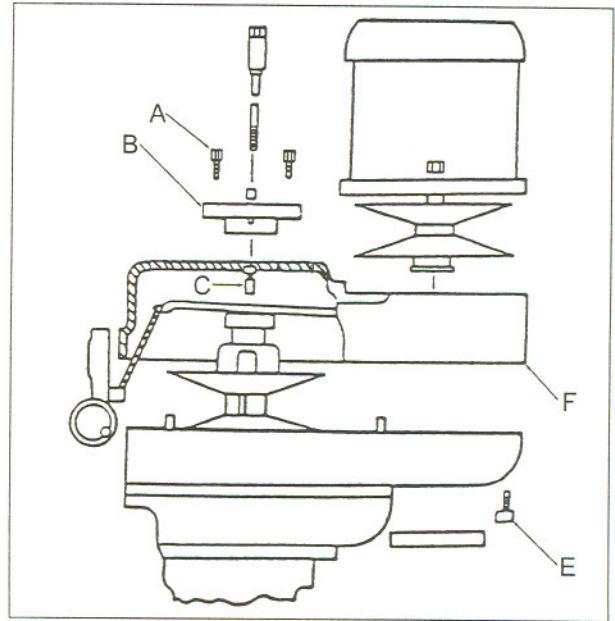


Fig. 17

### Brake Shoe Replacement

1. Disconnect the machine from the power source.
2. Remove the top section step by step.
3. Remove the clutch hub assembly (B & D, Fig. 18).
4. Replace the brake shoes (C, Fig. 18).

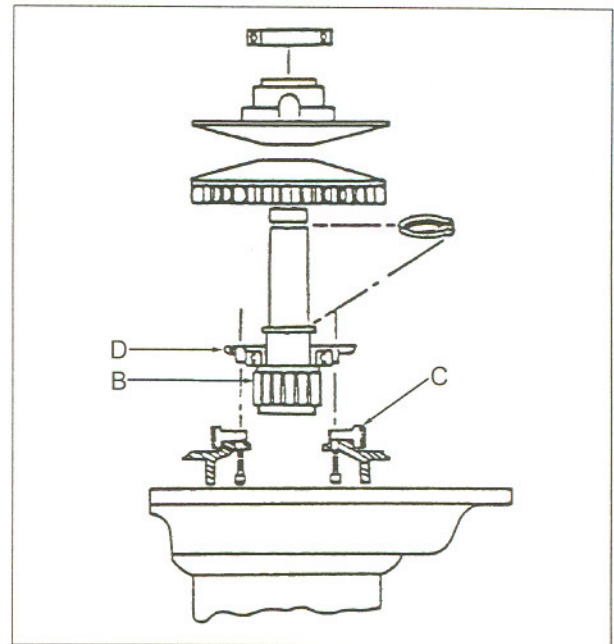
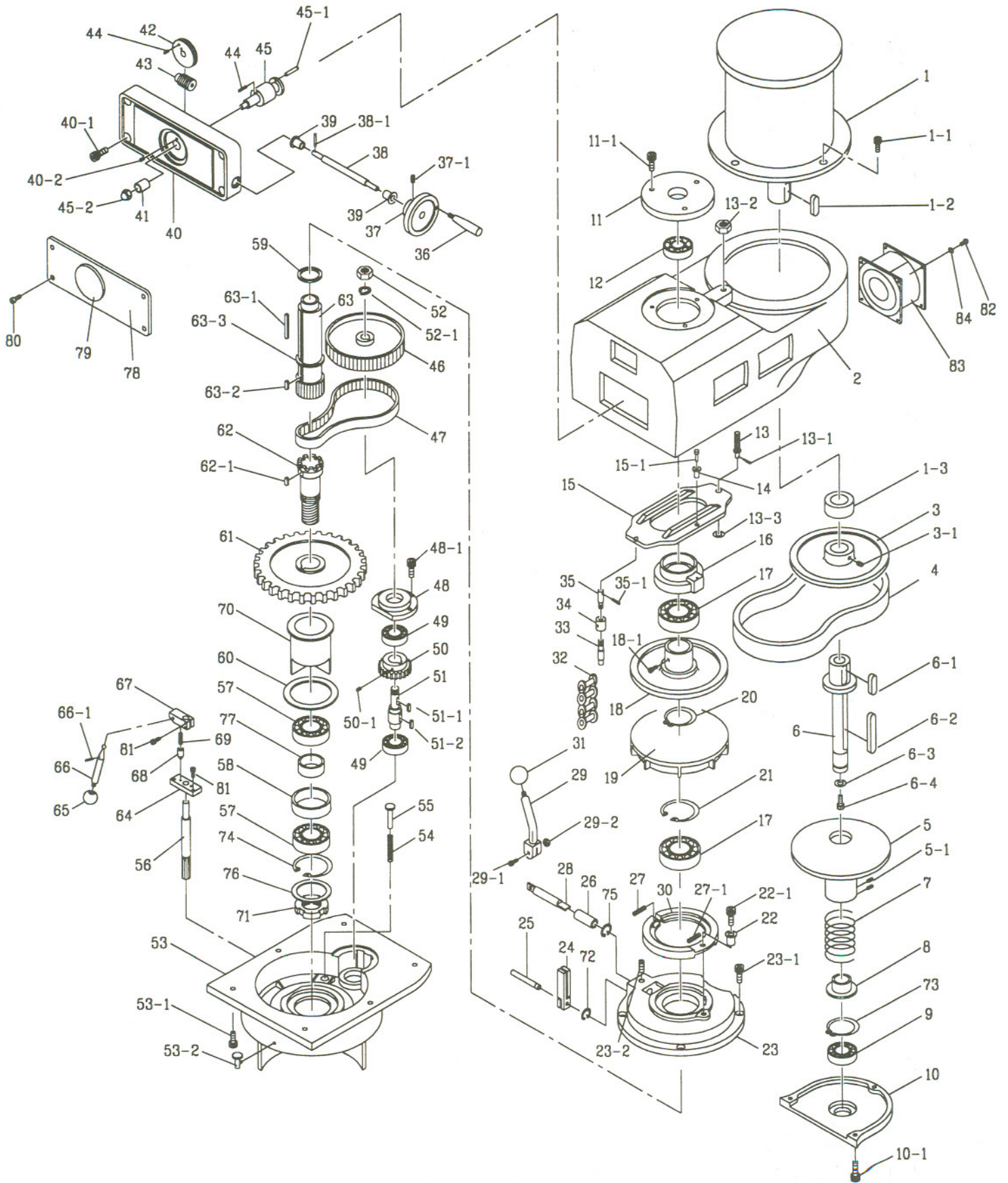


Fig. 18

# Breakdown for Variable Speed Head



## Parts List for the JTM-1055 Variable Speed Vertical Mill

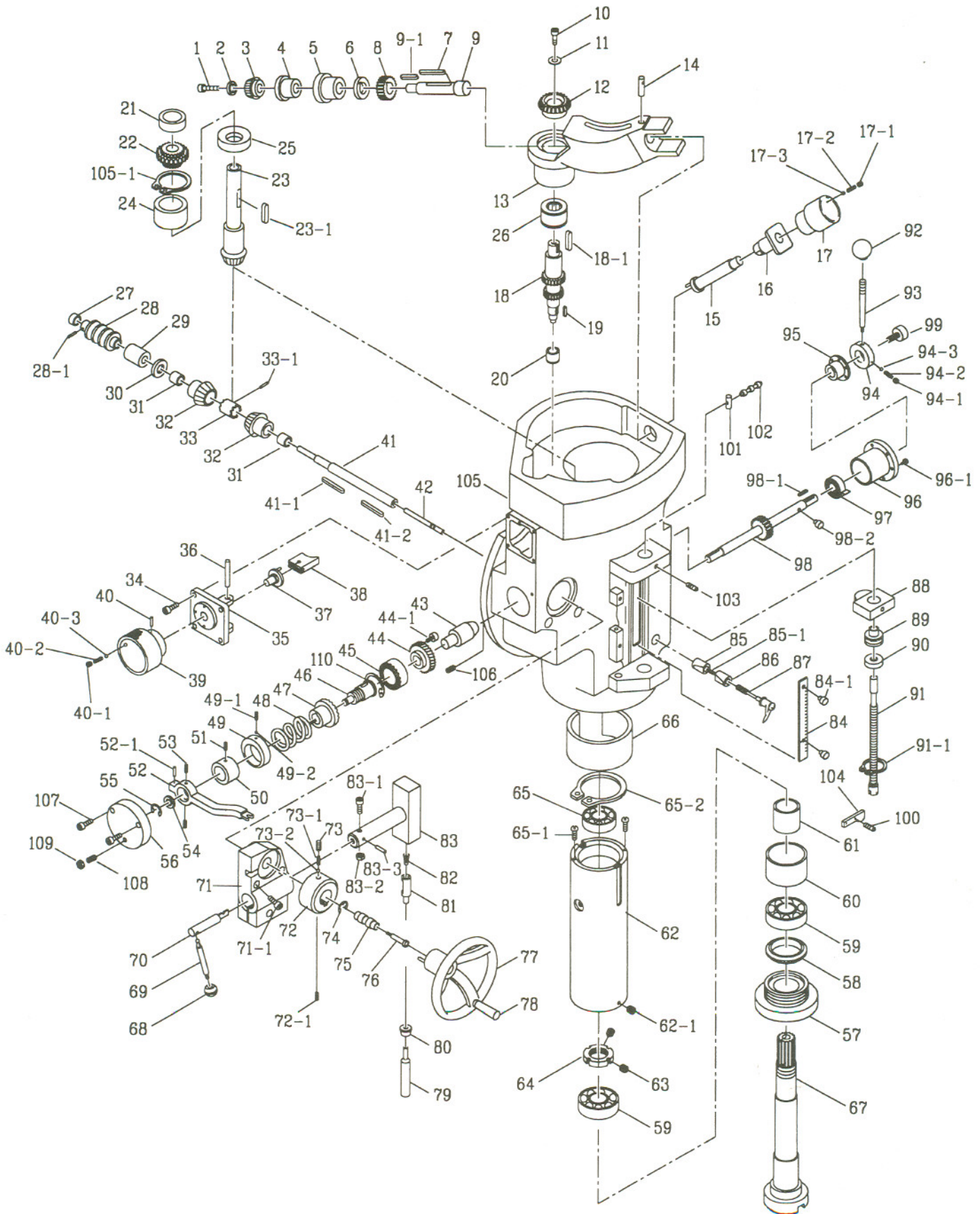
### Variable Speed Head Assembly

Index No.	Part No.	Description	Size	Qty.
1	JTM1055-V01	Motor		1
1-1	TS-0209051	Hex Socket Cap Screw	3/8"x1"	3
1-2	JTM1055-V01-2	Key	6x7x30	1
1-3	JTM1055-V01-3	Spacer		1
2	JTM1055-V02	Housing		1
3	JTM1055-V03	Motor Pulley		1
3-1	JTM1055-V03-1	Set Screw		1
4	JTM1055-V04	Belt	900VC3830	1
5	JTM1055-V05	Motor Pulley		1
5-1	JTM1055-V05-1	Screw		2
6	JTM1055-V06	Shaft		1
6-1	JTM1055-V06-1	Key	7x6x30	1
6-2	JTM1055-V06-2	Key	7x7x55	1
6-3	JTM1055-V06-3	Flat Washer	M8	1
6-4	TS-1504111	Hex Socket Cap Screw	M8x55	1
7	JTM1055-V07	Spring		1
8	JTM1055-V08	Bushing		1
9	BB-6005ZZ	Ball Bearing	6005ZZ	1
10	JTM1055-V10	Motor Pulley Cover		1
10-1	TS-1502041	Hex Socket Cap Screw	M5x16	3
11	JTM1055-V11	Bearing Cover		1
11-1	TS-10503051	Hex Socket Cap Screw	M6x20	3
12	BB-6009ZZ	Ball Bearing	6009ZZ	1
13	JTM1055-V13	Regulating Screw		1
13-1	JTM1055-V13-1	Spring Pin		1
13-2	JTM1055-V13-2	Hex Nut		1
13-3	JTM1055-V13-3	Washer		1
14	JTM1055-V14	Bushing		2
15	JTM1055-V15	Tilter		1
15-1	JTM1055-V15-1	Screw		2
16	JTM1055-V16	Support		1
17	BB-6012ZZ	Ball Bearing	6012ZZ	2
18	JTM1055-V18	Drive Pulley		1
18-1	JTM1055-V18-1	Drive Pulley Screw		1
19	JTM1055-V19	Steady Pulley		1
20	JTM1055-V20	C-Clip	S50	1
21	JTM1055-V21	C-Clip	R95	1
22	JTM1055-V22	Bushing		1
22-1	TS-1052021	Hex Socket Cap Screw	M5x6	1
23	JTM1055-V23	Lower Housing Cover		1
23-1	TS-1504051	Hex Socket Cap Screw	M8x25	3
23-2	JTM1055-V23-2	Set Screw	M6x6	1
24	JTM1055-V24	Brake Stud		2
25	JTM1055-V25	Brake Finger Pivot Stud		1
26	JTM1055-V26	Brake Shaft Sleeve		1
27	JTM1055-V27	Brake Spring		1
27-1	JTM1055-V27-1	Brake Spring (short)		1
28	JTM1055-V28	Brake Lock Shaft		1
29	JTM1055-V29	Brake Lock Handle		1
29-1	TS-1503061	Hex Socket Cap Screw	M6x25	1
29-2	JTM1055-V29-2	Hex Nut	M6	1

Index No.	Part No.	Description	Size	Qty.
30	JTM1055-V30A	Brake Assembly (Includes: #27, 27-1, 22, 22-1)		1
31	JTM1055-V31	Plastic Ball		1
32	JTM1055-V32	Chain		1
33	JTM1055-V33	Adjustment Stud		1
34	JTM1055-V34	Sleeve Nut		1
35	JTM1055-V35	Adjustment Stud		1
35-1	JTM1055-V35-1	Pin		1
36	JTM1055-V36	Wheel Handle		1
37	JTM1055-V37	Wheel		1
37-1	TS-1523031	Set Screw	M6x8	1
38	JTM1055-V38	Dial Control Shaft		1
38-1	JTM1055-V38-1	Spring Pin		1
39	JTM1055-V39	Bushing		2
40	JTM1055-V40	Dial Housing		1
40-1	TS-1502081	Hex Socket Cap Screw	M5x35	3
40-2	JTM1055-V40-2	Screw		1
41	JTM1055-V41	Bushing		1
42	JTM1055-V42	Worm Gear		1
43	JTM1055-V43	Worm		1
44	JTM1055-V44	Spring Pin		2
45	JTM1055-V45	Shaft		1
45-1	JTM1055-V45-1	Spring Pin		1
45-2	JTM1055-V45-2	Nut		1
46	JTM1055-V46	Timing Belt Pulley		1
47	JTM1055-V47	Belt	8M560	1
48	JTM1055-V48	Bearing Retainer		1
48-1	TS-1502051	Hex Socket Cap Screw	M5x20	1
49	JTM1055-V49	Ball Bearing	6203-2RS	2
50	JTM1055-V50	Bull Gear		1
50-1	JTM1055-V50-1	Set Screw	M8x6	1
51	JTM1055-V51	Counter Shaft		1
51-1	JTM1055-V51-1	Key	5x5x15	1
51-2	JTM1055-V51-2	Key	5x5x18	1
52	JTM1055-V52	Nut	5/8"	1
52-1	TS-0720131	Lock Washer	5/8"	1
53	JTM1055-V53	Lower Housing		1
53-1	TS-1504041	Hex Socket Cap Screw	M8x20	6
53-2	JTM1055-V53-2	Oil Cup		1
54	JTM1055-V54	Spring		3
55	JTM1055-V55	Spring Shaft		3
56	JTM1055-V56	Pinion Gear		1
57	JTM1055-V57	Ball Bearing	6910ZZ	2
58	JTM1055-V58	Spacer		1
59	JTM1055-V59	Spacer		1
60	JTM1055-V60	Spacer		1
61	JTM1055-V61	Spindle Gear		1
62	JTM1055-V62	Spindle Gear Hub		1
62-1	JTM1055-V62-1	Key	8x7x12	1
63	JTM1055-V63	Spindle Pulley Hub		1
63-1	JTM1055-V63-1	Key	8x7x60	1
63-2	JTM1055-V63-2	Key	8x8x20	1
63-3	JTM1055-V63-3	Spacer		1
64	JTM1055-V64	Deter Plate		1
65	JTM1055-V65	Plastic Ball		1
66	JTM1055-V66	Pinion Crank		1

Index No.	Part No.	Description	Size	Qty.
66-1	JTM1055-V66-1	Spring Pin		1
67	JTM1055-V67	Pinion Block		1
68	JTM1055-V68	Detent		1
69	JTM1055-V69	Spring		1
70	JTM1055-V70	Rack Cup		1
71	JTM1055-V71	Lock Nut		1
72	JTM1055-V72	C-Clip	S8	1
73	JTM1055-V73	C-Clip	S25	1
74	JTM1055-V74	C-Clip	R72	1
75	JTM1055-V75	C-Clip	S12	1
76	JTM1055-V76	Spacer		1
77	JTM1055-V77	Spacer		1
78	JTM1055-V78	Face Plate		1
79	JTM1055-V79	Dial Plate		1
80	JTM1055-V80	Screw	1/8"x1/4"	4
81	TS-1502041	Hex Socket Cap Screw	M5x16	4
82	JTM1055-V82	Screw	1/8"x1"	4
83	JTM1055-V83	Fan Assembly		1
84	JTM1055-V84	Flat Washer	1/8"	1
	JTM1055-WBC	Wiring Box Cover (not shown)		1
	JTM1055-PSC	Plastic Side Cover (not shown)		2
	JTM1055-JET	JET Plaque (not shown)		1

# Head Assembly

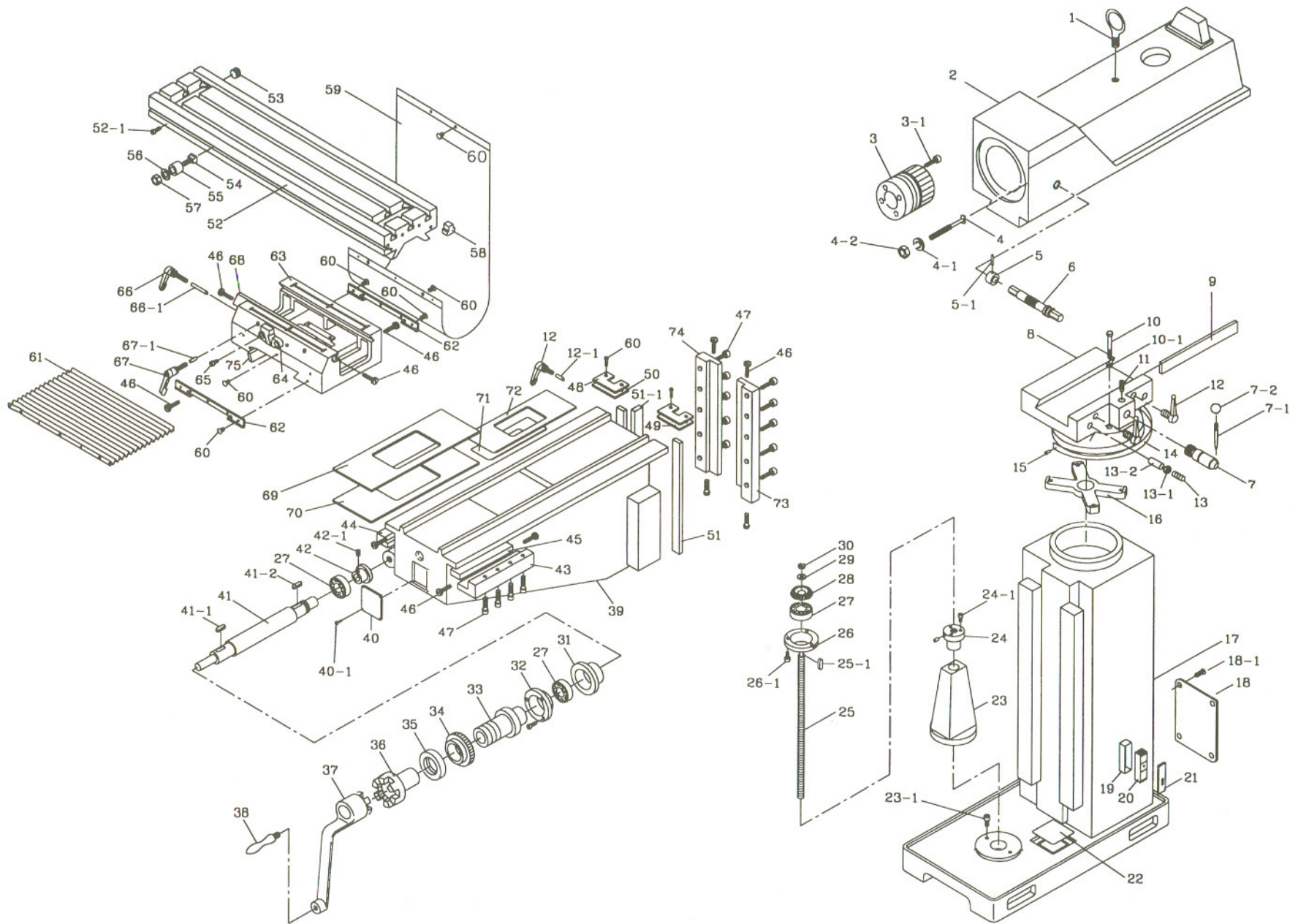


## Head Assembly

Index No.	Part No.	Description	Size	Qty.
1	JTM1055-H01	Hex Socket Cap Screw	M5X12	1
2	JTM1055-H02	Washer		1
3	JTM1055-H03	Bevel Gear		1
4	JTM1055-H04	Shaft Sleeve		1
5	JTM1055-H05	Bushing		1
6	JTM1055-H06	Spacer		1
7	JTM1055-H07	Key	3X3X20	1
8	JTM1055-H08	Gear		1
9	JTM1055-H09	Shaft		1
9-1	JTM1055-H09-1	Key	3x3x10	1
10	JTM1055-H10	Hex Socket Cap Screw	5/16"X1/2"	1
11	JTM1055-H11	Washer		1
12	JTM1055-H12	Bevel Gear		1
13	JTM1055-H13	Worm Gear Cradle		1
14	JTM1055-H14	Feed Engage Pin		1
15	JTM1055-H15	Worm Gear Cradle Shaft		1
16	JTM1055-H16	Shaft Sleeve		1
17	JTM1055-H17	Knob		1
17-1	JTM1055-H17-1	Set Screw	M6x8	1
17-2	JTM1055-H17-2	Spring		1
17-3	JTM1055-H17-3	Steel Ball		1
18	JTM1055-H18	Gear Shaft		1
18-1	JTM1055-H18-1	Key	5x5x8	1
19	JTM1055-H19	Key	5x5x12	1
20	JTM1055-H20	Needle Bearing	BA78Z	1
21	JTM1055-H21	Bushing		1
22	JTM1055-H22	Gear		1
23	JTM1055-H23	Shaft (w/bevel gear)		1
23-1	JTM1055-H23-1	Key	4x4x45	1
24	JTM1055-H24	Bevel Gear Bushing		1
25	JTM1055-H25	Spacer		1
26	JTM1055-H26	Needle Bearing	TA2620Z	1
27	JTM1055-H27	Bushing		1
28	JTM1055-H28	Worm Gear		1
28-1	JTM1055-H28-1	Spring Pin		1
29	JTM1055-H29	Bushing		1
30	JTM1055-H30	Washer		1
31	JTM1055-H31	Bushing		2
32	JTM1055-H32	Bevel Gear		2
33	JTM1055-H33	Feed Reverse Clutch		1
33-1	JTM1055-H33-1	Spring Pin		1
34	TS-1513011	Hex Socket Cap Screw	M5X10	4
35	JTM1055-H35	Cluster Gear Cover		1
36	JTM1055-H36	Shaft		1
37	JTM1055-H37	Gear Shift Crank		1
38	JTM1055-H38	Feed Gear Shift Fork		1
39	JTM1055-H39	Knob		1
40	JTM1055-H40	Set Screw	M6x6	1
40-1	JTM1055-H40-1	Set Screw	M6x6	1
40-2	JTM1055-H40-2	Spring		1
40-3	JTM1055-H40-3	Steel Ball		1
41	JTM1055-H41	Feed Worm Shaft		1
41-1	JTM1055-H41-1	Key	5x5x15	1

Index No.	Part No.	Description	Size	Qty.
41-2	JTM1055-H41-2	Key	5x5x10	1
42	JTM1055-H42	Reverse Clutch Rod		1
43	JTM1055-H43	Brass Shaft		1
44	JTM1055-H44	Worm Gear		1
44-1	JTM1055-H44-1	Round Head Screw		3
45	JTM1055-H45	Clutch Ring		1
46	JTM1055-H46	Overload Clutch Sleeve		1
47	JTM1055-H47	Overload Clutch		1
48	JTM1055-H48	Spring		1
49	JTM1055-H49	Clutch Lockout		1
49-1	JTM1055-H49-1	Set Screw	M6x8	1
49-2	JTM1055-H49-2	Brass Piece		1
50	JTM1055-H50	Brass Bushing		1
51	JTM1055-H51	Set Screw		1
52	JTM1055-H52	Clutch Trip Lever		1
52-1	JTM1055-H52-1	Spring Pin		1
53	JTM1055-H53	Flat Head Screw		2
54	JTM1055-H54	Clutch Washer		1
55	JTM1055-H55	E-Ring		1
56	JTM1055-H56	Clutch Arm Cover		1
57	JTM1055-H57	Nose Piece		1
58	JTM1055-H58	Spindle Dirt Shield		1
59	JTM1055-H59	Angular Bearing	7010	2
60	JTM1055-H60	Spacer		1
61	JTM1055-H61	Spacer		1
62	JTM1055-H62	Quill		1
62-1	JTM1055-H62-1	Set Screw	M5x5	1
63	JTM1055-H63	Set Screw	M6x6	2
64	JTM1055-H64	Lock Nut		1
65	JTM1055-H65	Ball Bearing	6008ZZ	1
65-1	JTM1055-H65-1	Cross Head Screw		2
65-2	JTM1055-H65-2	C-Clip	S37	1
66	JTM1055-H66	Quill Skirt		1
67	JTM1055-H67	Spindle		1
68	JTM1055-H68	Black Plastic Ball		1
69	JTM1055-H69	Trip Handle		1
70	JTM1055-H70	Cam Rod		1
71	JTM1055-H71	Feed Trip Bracket		1
71-1	TS-1513051	Hex Socket Cap Screw	M5x25	2
72	JTM1055-H72	Hand Wheel Clutch		1
72-1	JTM1055-H72-1	Set Screw	M6x6	1
73	JTM1055-H73	Set Screw	M8x6	1
73-1	JTM1055-H73-1	Spring		1
73-2	JTM1055-H73-2	Ball		1
74	JTM1055-H74	C-Clip		1
75	JTM1055-H75	Reverse Knob		1
76	JTM1055-H76	Knob Stud		1
77	JTM1055-H77	Handle Wheel		1
78	JTM1055-H78	Handle		1
79	JTM1055-H79	Feed Trip Plunger		1
80	JTM1055-H80	Bushing		1
81	JTM1055-H81	Trip Plunger		1
82	JTM1055-H82	Spring		1
83	JTM1055-H83	Cam Rod Sleeve		1
83-1	TS-1502051	Hex Socket Cap Screw	M5x20	1

Index No.	Part No.	Description	Size	Qty.
83-2	JTM1055-H83-2	Hex Nut		1
83-3	JTM1055-H83-3	Spring Pin		1
84	JTM1055-V84	Micrometer Scale		1
84-1	JTM1055-V84-1	Round Head Screw		2
85	JTM1055-H85	Quill Lock Sleeve (threaded)		1
85-1	JTM1055-H85-1	Spring		1
86	JTM1055-H86	Quill Lock Sleeve		1
87	JTM1055-H87	Lock Handle		1
88	JTM1055-H88	Quill Stop Knob		1
89	JTM1055-H89	Quill Micro-Stop Nut		1
90	JTM1055-H90	Quill Micro-Jam Nut		1
91	JTM1055-H91	Quill Micro-Screw		1
91-1	JTM1055-H91-1	C-Clip		1
92	JTM1055-H92	Plastic Ball		1
93	JTM1055-H93	Handle		1
94	JTM1055-H94	Hub		1
94-1	JTM1055-H94-1	Set Screw	5/16"x3/8"	1
94-2	JTM1055-H94-2	Spring		1
94-3	JTM1055-H94-3	Steel Ball		1
95	JTM1055-H95	Hub Sleeve		1
96	JTM1055-H96	Spring Cover		1
96-1	TS-1502101	Hex Socket Cap Screw	M5x12	1
97	JTM1055-H97	Clock Spring		1
98	JTM1055-H98	Quill Pinion Shaft		1
98-1	JTM1055-H98-1	Key	5x5x25	1
98-2	JTM1055-H98-2	T-Pin		1
99	JTM1055-H99	Pinion Shaft Hub		1
100	JTM1055-H100	Set Screw		1
101	JTM1055-H101	Plunger		1
102	JTM1055-H102	Lever		1
103	JTM1055-H103	Set Screw		1
104	JTM1055-H104	Feed Trip Lever		1
105	JTM1055-H105	Quill Housing		1
105-1	JTM1055-H105-1	C-Clip		1
106	JTM1055-H106	Set Screw	M6x8	1
107	TS-1502071	Hex Socket Cap Screw	M5x45	2
108	JTM1055-H108	Set Screw	M6x15	1
109	JTM1055-H109	Hex Nut		1
110	JTM1055-H110	C-Clip	S22	1
	JTM1055-FRS	Forward Reverse Switch (not shown)		1
	JTM1055-FRSC	Forward Reverse Switch Cover (not shown)		1
	JTM1055-SC	Short Cable from Switch to Breaker (not shown)		1
	JTM1055-LC	Long Cable from switch to Breaker Box (not shown)		1
	JTM1055-SR	Plastic Strain Relief (not shown)		1



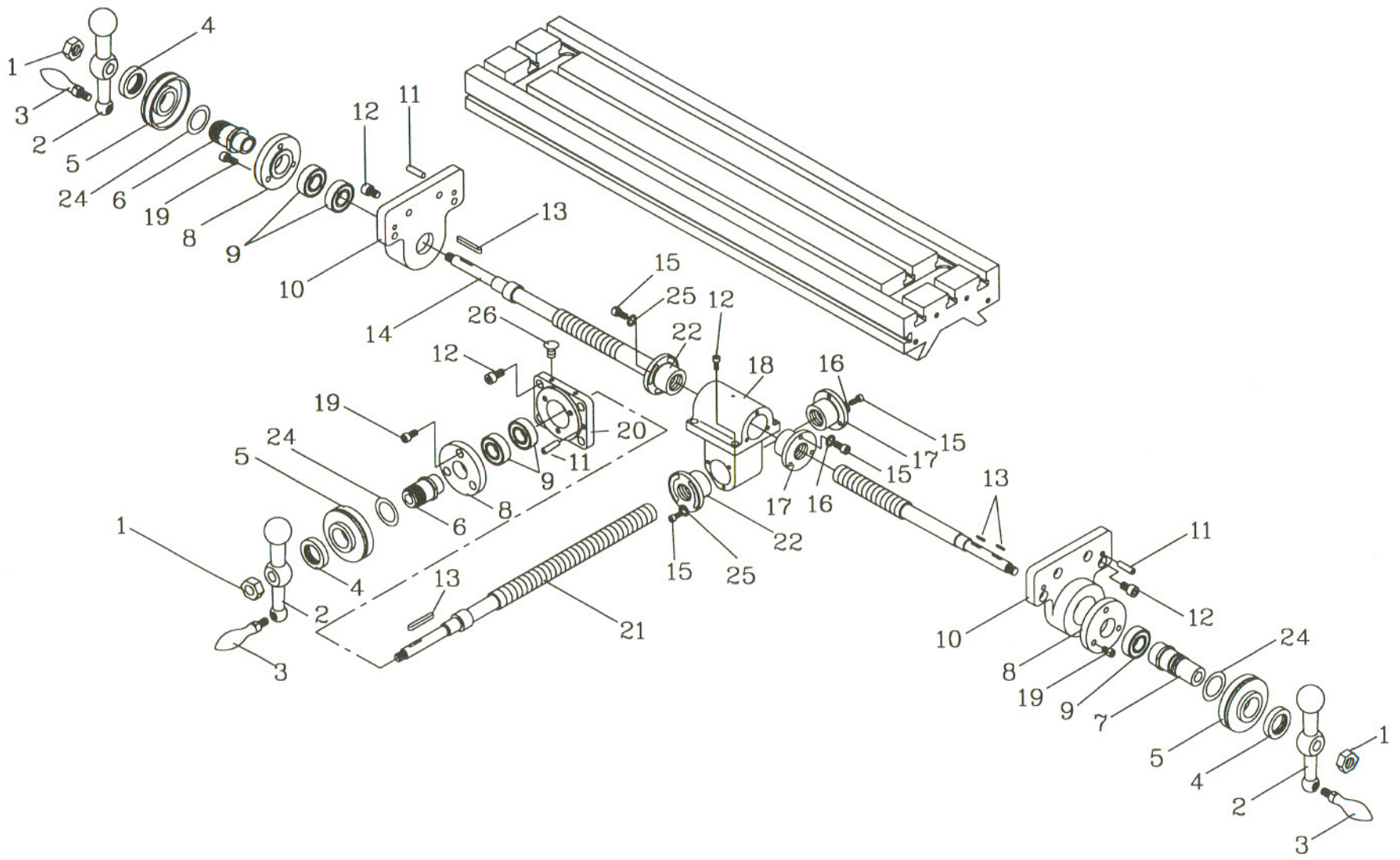
Base Assembly

## Base Assembly

Index No.	Part No.	Description	Size	Qty.
1	JTM1055-B01	Eye Bolt		1
2	JTM1055-B02	Ram		1
3	JTM1055-B03	Head Tilt Block		1
3-1	JTM1055-B03-1	Hex Socket Cap Screw	M10x95	4
4	JTM1055-B04	Bolt		4
4-1	JTM1055-B04-1	Lock Washer		4
4-2	JTM1055-B04-2	Hex Nut		4
5	JTM1055-B05	Flange		1
5-1	JTM1055-B05-1	Spring Pin		1
6	JTM1055-B06	Worm Shaft		1
7	JTM1055-B07	Ram Pinion		1
7-1	JTM1055-B07-1	Handle		1
7-2	JTM1055-B07-2	Plastic Ball		1
8	JTM1055-B08	Turret		1
9	JTM1055-B09	Gib		1
10	JTM1055-B10	Bolt		4
10-1	JTM1055-B10-1	Washer		4
11	JTM1055-B11	Set Screw		1
12	JTM1055-B12	Lock Handle		2
12-1	JTM1055-B12-1	Brass Block		2
13	JTM1055-B13	Set Screw	M10X60	2
13-1	JTM1055-B13-1	Hex Nut	M10	2
13-2	JTM1055-B13-2	Block		2
14	JTM1055-B14	Scale Label		1
15	JTM1055-B15	Rivet		4
16	JTM1055-B16	Spider		1
17	JTM1055-B17	Base		1
18	JTM1055-B18	Cover		1
18-1	JTM1055-B18-1	Round Head Screw	M5x10	4
19	C-132A	Breaker Box (w/ #21)		1
20	C-133	Beaker		1
21	C-134	Breaker Box Cover		1
	C-133A	Breaker Box Assembly (w/ #19-21)		1
22	JTM1055-B22	Strainer		1
23	JTM1055-B23	Lead Screw Housing		1
23-1	TS-1503041	Hex Socket Cap Screw	M6x16	3
24	JTM1055-B24	Flange		1
24-1	TS-1503081	Hex Socket Cap Screw	M6x35	2
25	JTM1055-B25	Lead Screw		1
25-1	JTM1055-B25-1	Key	5x5x20	1
26	JTM1055-B26	Flange		1
26-1	TS-1503051	Hex Socket Cap Screw	M6x20	3
27	BB-6204ZZ	Ball Bearing	6204ZZ	3
28	JTM1055-B28	Bevel Gear		1
29	JTM1055-B29	Washer		1
30	JTM1055-B30	Hex Nut		1
31	JTM1055-B31	Bearing Cover		1
32	JTM1055-B32	Bearing Stop		1
33	JTM1055-B33	Dial Holder		1
34	JTM1055-B34	Dial Ring		1
35	JTM1055-B35	Dial Lock Nut		1
36	JTM1055-B36	Gear Shear Clutch		1
37	JTM1055-B37	Elevating Crank		1

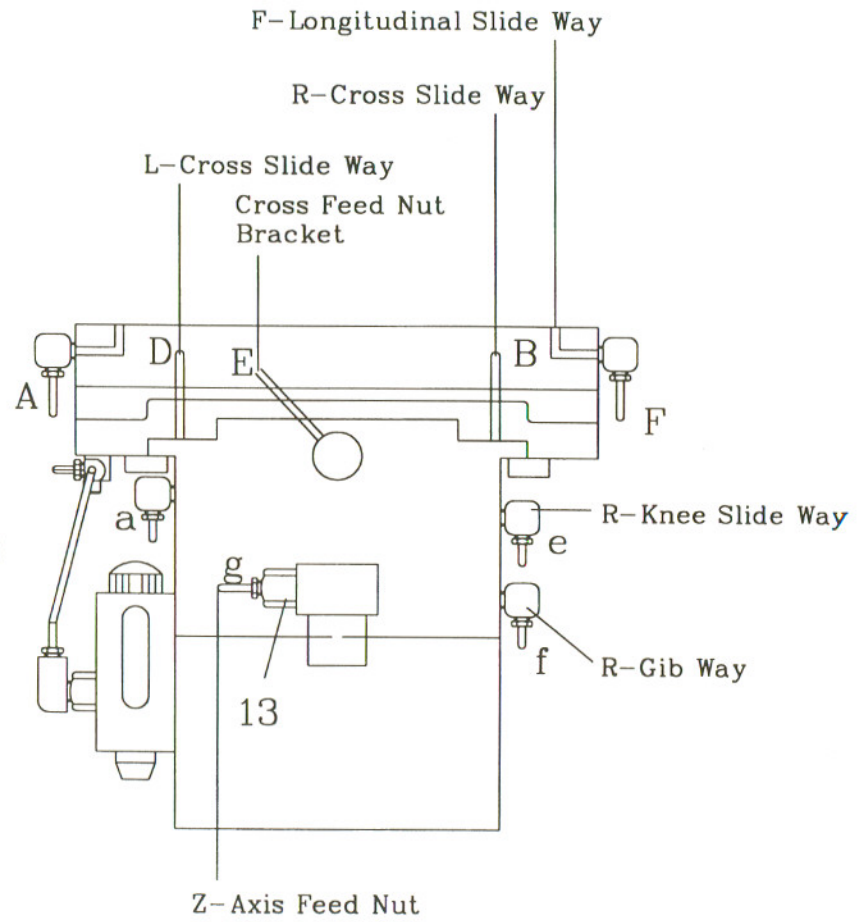
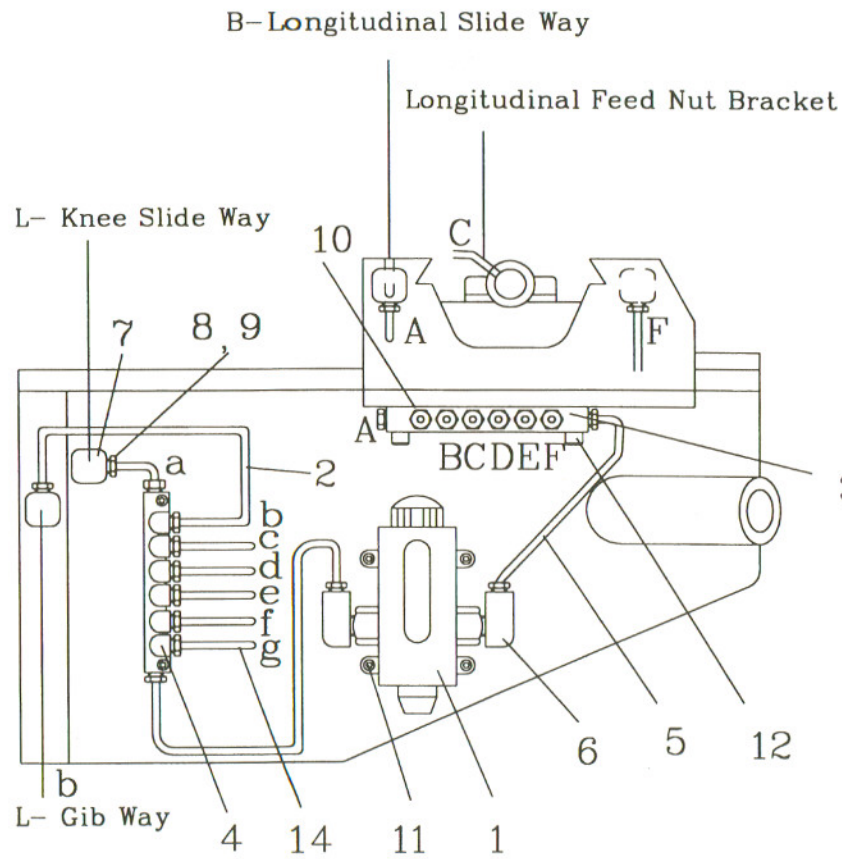
Index No.	Part No.	Description	Size	Qty.
38	JTM1055-B38	Handle		1
39	JTM1055-B39	Knee		1
40	JTM1055-B40	Knee Front Cover		1
40-1	JTM1055-B40-1	Cross Head Screw	M5x20	4
41	JTM1055-B41	Shaft		1
41-1	JTM1055-B41-1	Key	3x3x10	1
41-2	JTM1055-B41-2	Key	4x4x16	1
42	JTM1055-B42	Bevel Gear		1
42-1	JTM1055-B42-1	Set Screw	M6x20	1
43	JTM1055-B43	Gib Holder-R		1
44	JTM1055-B44	Gib Holder-L		1
45	JTM1055-B045	Gib		2
46	JTM1055-B46	Adjusting Screw		12
47	TS-1506041	Hex Socket Cap Screw	M12x35	18
48	JTM1055-B48	Wiper Cover		2
49	JTM1055-B49	Wiper-R		1
50	JTM1055-B50	Wiper-L		1
51	JTM1055-B51	Gib		1
51-1	JTM1055-B51-1	Gib		
52	JTM1055-B52	Table		1
52-1	TS-1502061	Hex Socket Cap Screw	M5x25	2
53	JTM1055-B53	Plug		2
54	JTM1055-B54	T-Bolt		2
55	JTM1055-B55	Bushing		2
56	JTM1055-B56	Flat Washer		2
57	JTM1055-B57	Hex Nut		2
58	JTM1055-B58	Rubber T-Nut		6
59	JTM1055-B59	Chip Guard		1
60	JTM1055-B60	Screw		22
61	JTM1055-B61	Dust Protective Cover		1
62	JTM1055-B62	Wiper		2
63	JTM1055-B62	Saddle		1
64	JTM1055-B64	Stop Block		1
65	JTM1055-B65	Hex Socket Cap Screw		2
66	JTM1055-B66	Handle		2
66-1	JTM1055-B66-1	Brass Block		2
67	JTM1055-B67	Handle		2
67-1	JTM1055-B67-1	Brass Block		2
68	JTM1055-B68	Gib		1
69	JTM1055-B69	Chip Guard Assembly (includes: #69-72)		1
70		Chip Guard-L		1
71		Chip Guard-M		1
72		Chip Guard-S		1
73	JTM1055-B73	Gib Holder-R		1
74	JTM1055-B74	Gib Holder-L		1
75	JTM1055-B75	Gib		1
	JTM1055-TBC	Toolbox Complete (not shown)		1
	JTM1055-LP	Leveling Pad (not shown)		4
	JTM1055-LB	Leveling Bolt w/Nut (not shown)		4
	JTM1055-JS	JET Striping (not shown)		1
	JTM1055-ID	ID & Warning Label (not shown)		1

Lead Screw Assembly



## Lead Screw Assembly

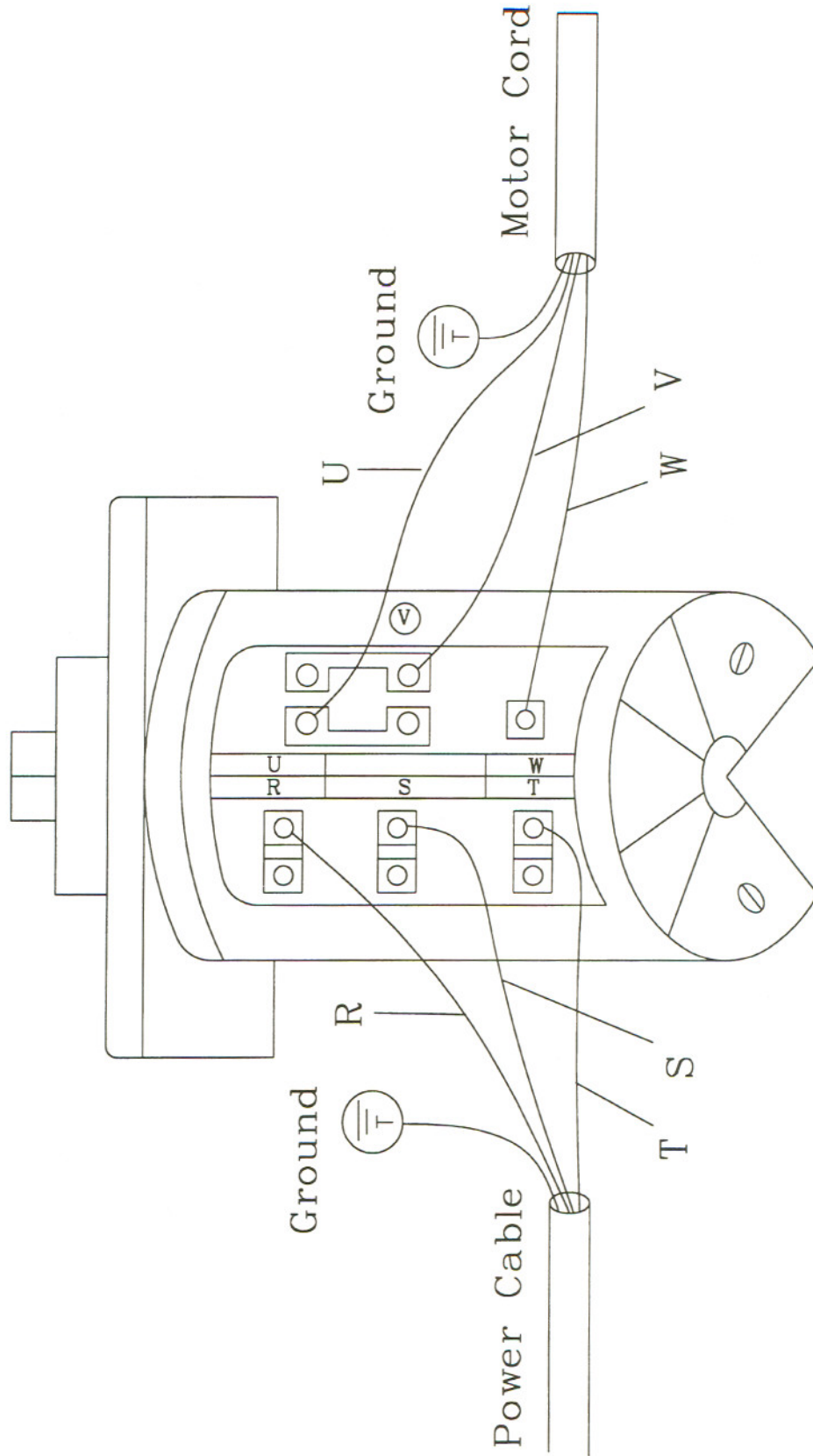
Index No.	Part No.	Description	Size	Qty.
1	JTM1055-L01	Nut	1/2-20UNF	3
2	JTM1055-L02	Ball Crank		3
3	JTM1055-L03	Handle		3
4	JTM1055-L04	Dial Lock Nut		3
5	JTM1055-L05	Dial		3
6	JTM1055-L06	Dial Holder		2
7	JTM1055-L07	Dial Holder-(left)		1
8	JTM1055-L08	Bearing Stop		3
9	BB-6204ZZ	Ball Bearing		5
10	JTM1055-L10	Bearing Bracket		2
11	JTM1055-L11	Spring Pin	M5X20	6
12	TS-1505031	Hex Socket Cap Screw	M10X25	16
13	JTM1055-L13	Key	3X3X25	4
14	JTM1055-L14	Lead Screw		1
15	TS-1503041	Hex Socket Cap Screw	M6X25	8
16	TS-1550041	Washer	M6	2
17	JTM1055-L17	Feed Screw Nut		2
18	JTM1055-L18	Feed Nut Bracket		1
19	TS-1514011	Hex Socket Cap Screw	M6X12	9
20	JTM1055-L20	Cross Feed Bearing Bracket		1
21	JTM1055-L21	Cross Feed Screw		1
22	JTM1055-L22	Adjustable Cross Feed Nut		2
24	JTM1055-L24	Spacer		3
25	JTM1055-L25	Lock Washer	M6	2
26	JTM1055-L26	Cross Head Screw		2



## One Shot Lubrication System

Index No.	Part No.	Description	Size	Qty.
1	JTM1055-CLA	Lubricating Pump		1
2	ALMP-04	Aluminum Pipe	13.5x450L	1
3	A-8	Oil Regulating Distributor		1
4	JTM1055-A4	Oil Regulating Distributor		1
5	A-5	Flexible Steel Tube	4X550	1
6	PH-4011	Elbow joint		2
7	PI-401	Elbow joint		8
8	PA-4	Thimble Nut		26
9	PB-4	Thimble		26
10	PG-004	Union		1
11	TS-1503031	Hex Socket Cap Screw	M6X12	4
12	TS-1502061	Hex Socket Cap Screw	M5X25	4
13	PD-401	Straight Joint		1
14	A-14	Nylon Piece	4X700	1

# Wiring for Forward/Reverse Switch



Wiring Diagram

