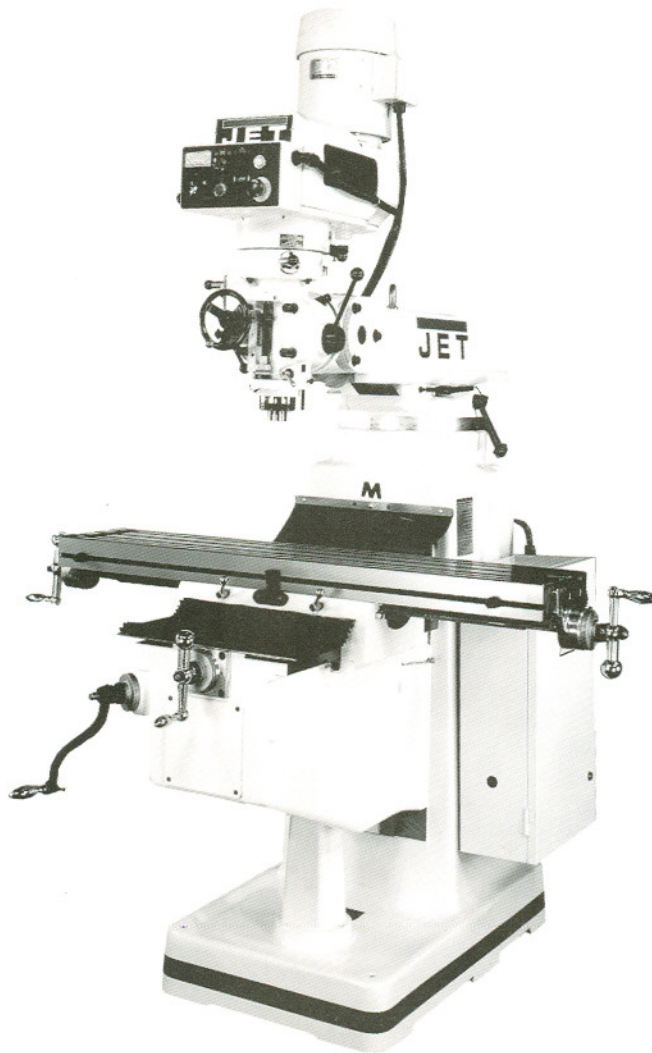


# **JET**

**EQUIPMENT & TOOLS**

## **OPERATOR'S MANUAL**

### **JTM-1050EVS**



**JET EQUIPMENT & TOOLS, INC.**  
A WMH Company

P.O. BOX 1349  
Auburn, WA 98071-1349

253-351-6000  
Fax 253-939-8001  
M-690060 2/2001

# 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.

 **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 blades or other 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 that it was not designed for.
10. Replace warning labels if they become obscured or removed.
11. Make certain the motor 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. **WARNING:** Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to cause cancer, birth defects of 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

**The JTM-1050EVS mill is pre-wired from the factory. Stock Number 690060 is Pre-wired 230V. Stock Number 690062 is Pre-wired 460V. This machine is not dual voltage.**

## Specifications

## JTM-1050EVS

Stock Number (230V only).....	690060
Stock Number (460V only).....	690062
Spindle Taper.....	R-8
Diameter of Quill.....	3 3/8"
Number of Spindle Speeds.....	Variable
Range of Spindle Speeds.....	10 to 3,600 RPM
Downfeeds of Spindle (per/rev/in).....	.0015", .003", .006"
Spindle Travel.....	5"
Head Movement.....	90° L and R 45° F and B
Distance Spindle to Table.....	19"
Distance Spindle to Column.....	26 1/2"
Distance Spindle to Column.....	6"
Collet Capacity.....	1/8" – 7/8"
Table Size.....	10" x 50"
Longitudinal Table Travel.....	35"
Cross Travel.....	16"
Number of T-Slots & Size.....	3 & 5/8"
T-Slot Centers.....	2-1/2"
Maximum Table Load.....	720 Lbs.
Knee Travel.....	16-1/2"
Overarm Travel.....	21 1/4"
Overall Dimensions.....	95 3/4"W x 70 5/8"D x 88-3/4"H
Motor.....	3 HP, 3Ph., Pre-wired 230V or 460V
Net Weight (approx.).....	3000 Lbs.
Shipping Weight.....	3050 Lbs.

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The specifications in this manual are given as general information and are not binding. Jet Equipment and Tools reserve 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.

# JTM-1050 EVS Installation Layout

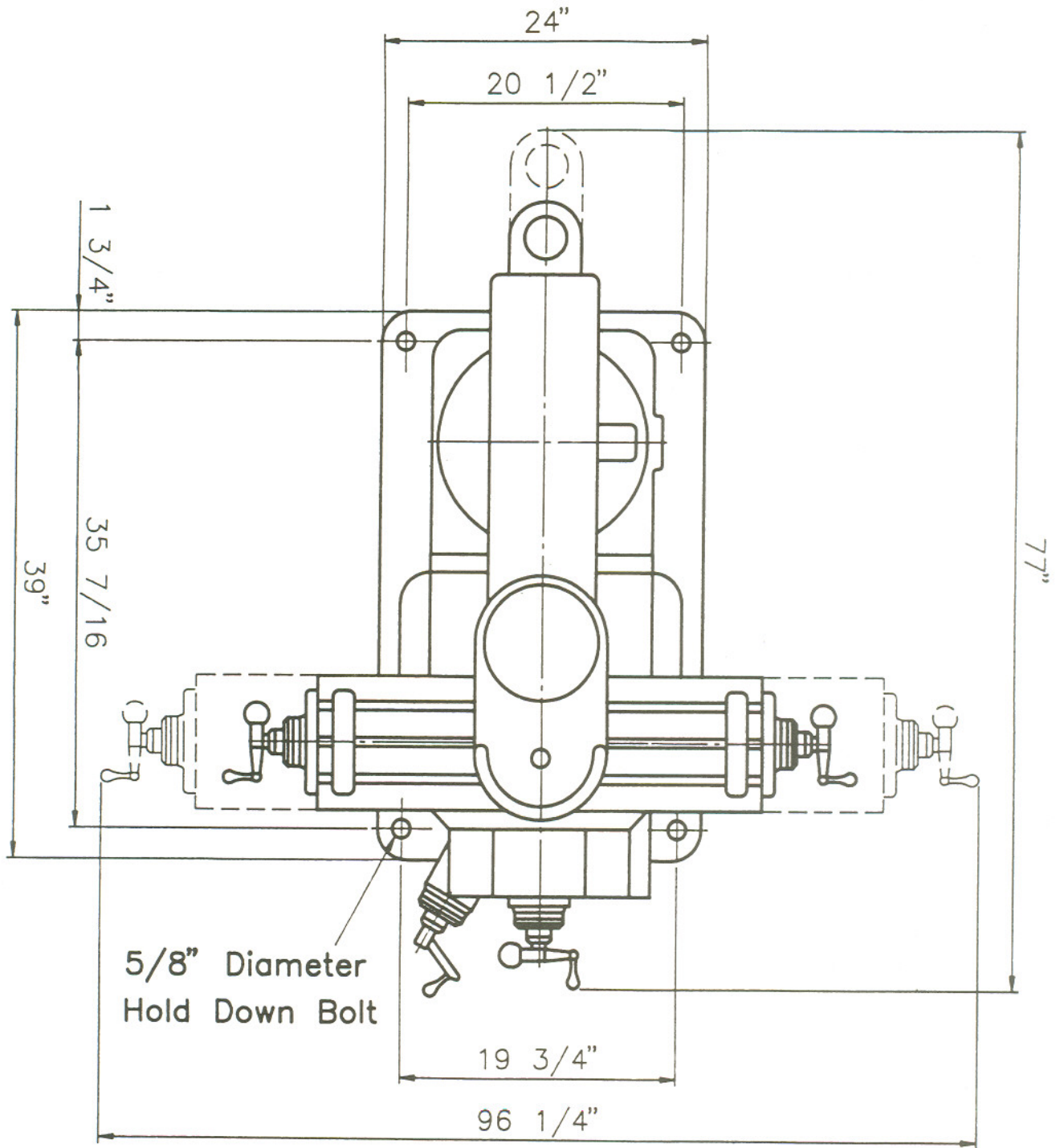


Fig. 1

## Shipping Container Contents

- 1 Mill
- 1 Flat Way Cover (rear)
- 1 Accordion Way Cover (front)
- 1 Tool Box:
  - 1 Hex Wrench Set (1.5 - 10mm)
  - 1 19mm Combination Wrench
  - 1 #2 Cross Point Screw Driver
  - 1 #2 Flat Blade Screw Driver
  - 1 Plastic Oil Can
  - 1 Operator's Manual
  - 1 Warranty Card
  - 1 Eye Bolt

## Unpacking and Clean-Up

1. Finish removing the sides and top of the crate. Leave the mill bolted to the skid until it is ready to move to its final location.
2. 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.
3. 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 and bolted to the floor. Anchor bolts of sufficient size and length must be fastened to the floor according to the footprint of the mill. See Fig. 1.

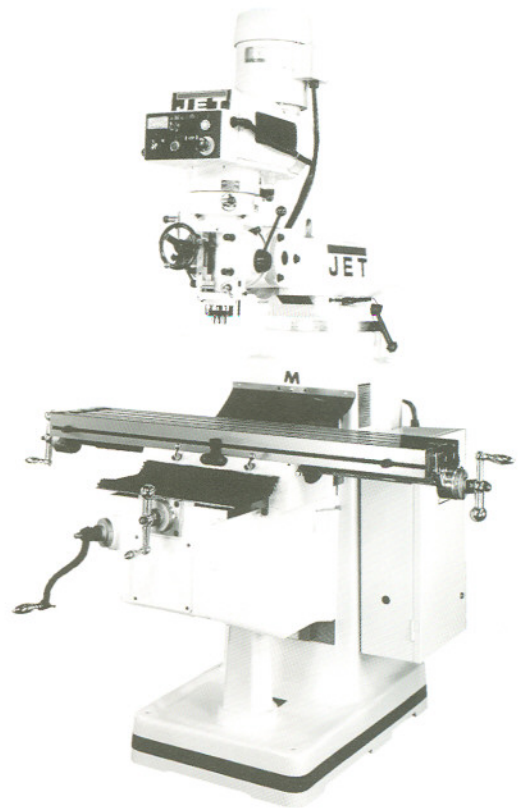


Fig.1

## Lifting the Mill

The method for lifting the mill is with a hook through the eye bolt (A, Fig. 2) screwed into the tapped hole on the ram. Steady the mill to prevent it from spinning.

**Note:** Tighten ram locking bolts (B, Fig. 2) before lifting.

Carefully lift the mill and move to a position over the anchor bolts. Lower the mill over the anchor bolts, check for level, and secure with washers and anchor bolt nuts.

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, 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.

**Note:** The JTM-1050EVS pictured in figure 2 shows DRO, and POWERFEED optional accessories available through JET.

## Lubrication

### Caution

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

**Spindle Bearings** – (A, Fig. 3) fill oil cup once daily with 10W-machine oil.

**Oil Pump** – (C, Fig. 2) fill reservoir as needed by removing cap on top of tank and filling with 10W machine oil. Pump oil with release handle once for every hour of operation. Way surfaces and leadscrews are lubricated in this manner.

**Knee Leadscrew** – (D, Fig. 2) lubricate with #2 tube grease once weekly.

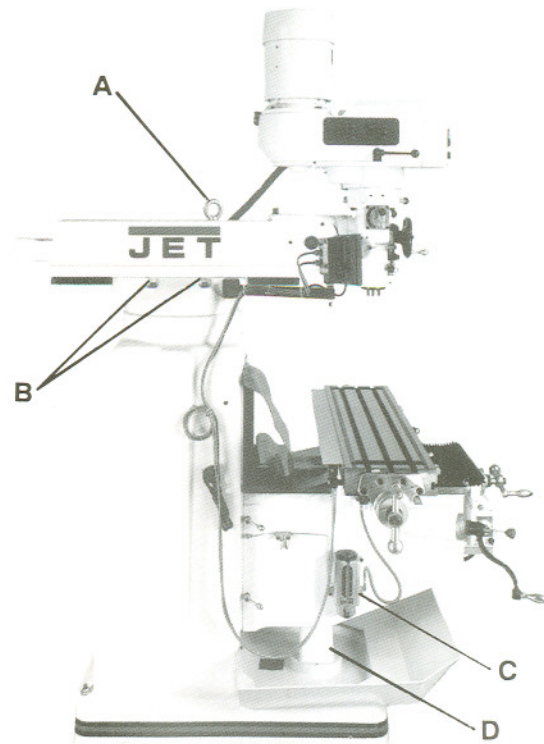


Fig.2

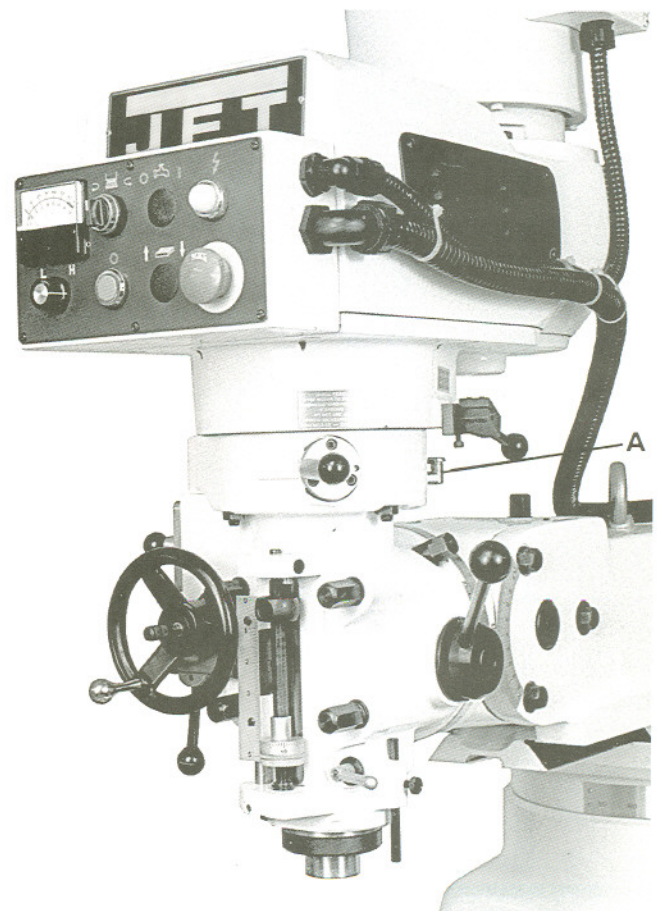


Fig.3

## Electrical Connections

### WARNING

A qualified electrician must make all electrical connections!  
Failure to comply may cause serious injury!

The JTM-1050EVS mill is pre-wired from the factory. Stock Number 690060 is Pre-wired 230V. Stock Number 690062 is Pre-wired 460V. This machine is not dual voltage.

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

The mill must be properly grounded.

## Controls

- A. **Spindle Brake** (A, Fig. 4) - located on left side of the head. Move in either direction to stop spindle once power has been turned off.
- B. **High-Neutral-Low Lever** (B, Fig. 5) - located on the right side of the head. Upper position is high speed (direct drive). Middle position is neutral. Lower position is low speed (back gear).

### Caution

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

- C. **Power Feed Transmission Engagement Crank** (C, Fig. 5) - located on the right side of the head. When lever is in the right-hand side hole, the power feed worm gear is disengaged. To engage power feed, pull knob out and move lever around to the left-hand side. Release the pin into the hole.

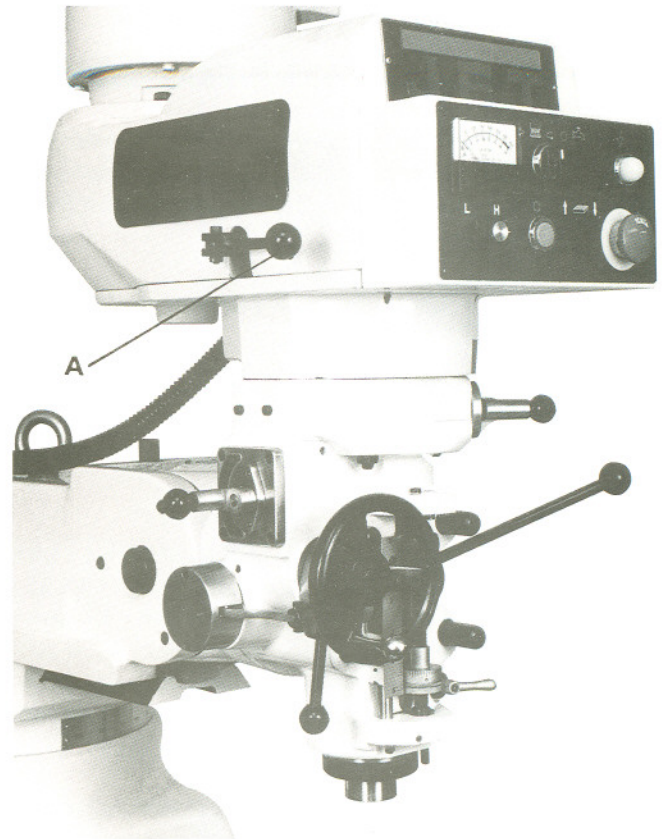


Fig.4

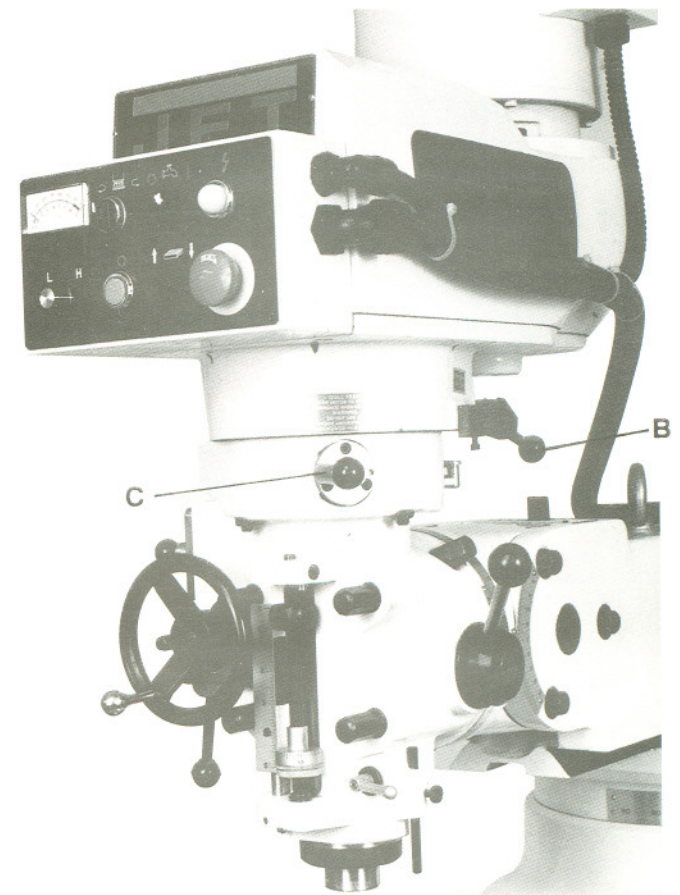


Fig.5



### Caution

Engage gently to avoid damage to the worm gear.

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 3000 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.

- D. **Quill Feed Handle** (D, Fig. 6) - located on right side of head. Rotate clockwise to lower spindle. Return spring will retract the spindle automatically once the handle is released.
- E. **Quill Lock** (E, Fig. 6) - 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.
- F. **Micrometer Adjusting Nut** (F, Fig. 6), - located on the front of the head. Use for setting specific spindle depth.
- G. **Feed Control Lever** (G, Fig. 6) - located on the left side of the head. Engages overload clutch on pinion shaft when positioned to the left. Stays engaged until quill stop comes in contact with micrometer adjusting nut (forcing feed control lever to drop out automatically), or until lever is released manually by engaging lever to the right.
- H. **Manual Feed** (H, Fig. 6) - located on the left side of the head. Feed reversing knob (I, Fig. 5) must be in the neutral position. The feed control lever (G, Fig. 5) must be engaged.  
**Note:** manual feed handle and handwheel may be taken off when not in use.
- I. **Feed Reversing Knob** (f, Fig. 6) - located in center of manual feed handwheel. Position of the handle depends upon the direction of spindle rotation. If boring with right hand cutting tools, pull feed handle towards operator until clutch becomes engaged. Neutral position is between forward and reverse position.

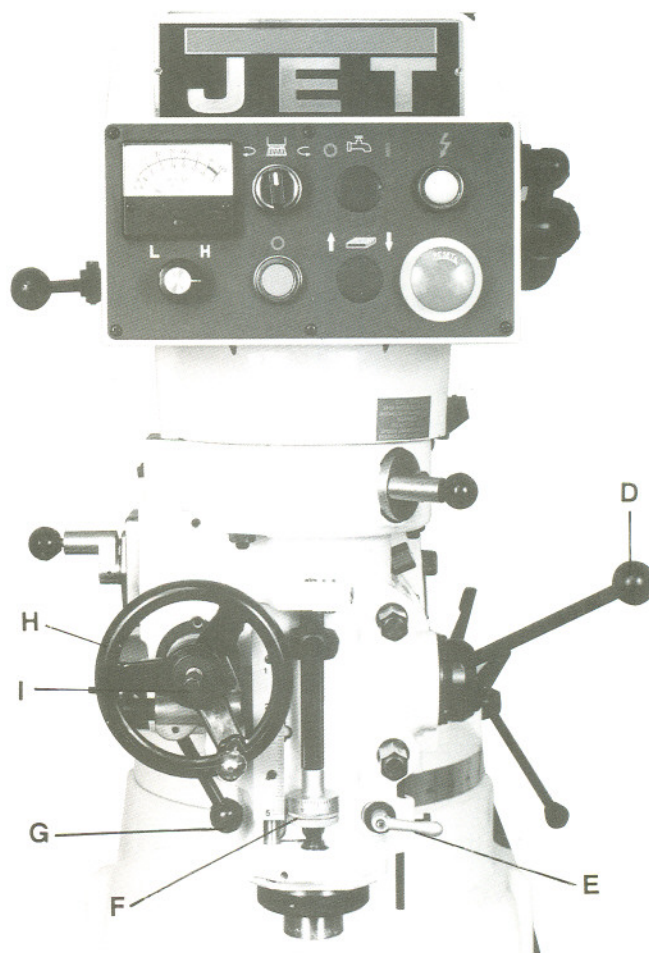


Fig.6

### Caution

It is recommended that the handle be left in the neutral position when not in use.

- J. **Quill Stop** (J, Fig. 7) - 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.
- K. **Quill Feed Speed Selector** (K, Fig. 7) - located on the left side of the head. Pull knob out and locate handle over choice of three feed speeds - 1.5, .003, and .006 thousandths per spindle revolution. Feed is more readily engaged when spindle is turning.
- L. **Reversing Switch** (L, Fig. 7) - located on the left side of the head. Switches rotation of spindle.
- M. **RPM Gauge** (M, Fig. 7) - located on the control panel.
- N. **Coolant Switch** (N, Fig. 7) - located on the control panel. The switch is installed for optional coolant pump. The wiring must be hooked to U2, V2, and W2 in the terminal strip.
- O. **Power Lamp** (O, Fig. 7) - located on the control panel.
- P. **Low/High Switch** (P, Fig. 7) - located on the control panel.
- Q. **Spindle Switch** (Q, Fig. 7) - located on the control panel.
- R. **Power Feed** (R, Fig. 7) - located on the control panel. The switch is installed for optional power feed. The wiring must be hooked to 110V, OV in the terminal strip.
- S. **Emergency Stop Switch** (S, Fig. 7) - located on the control panel.

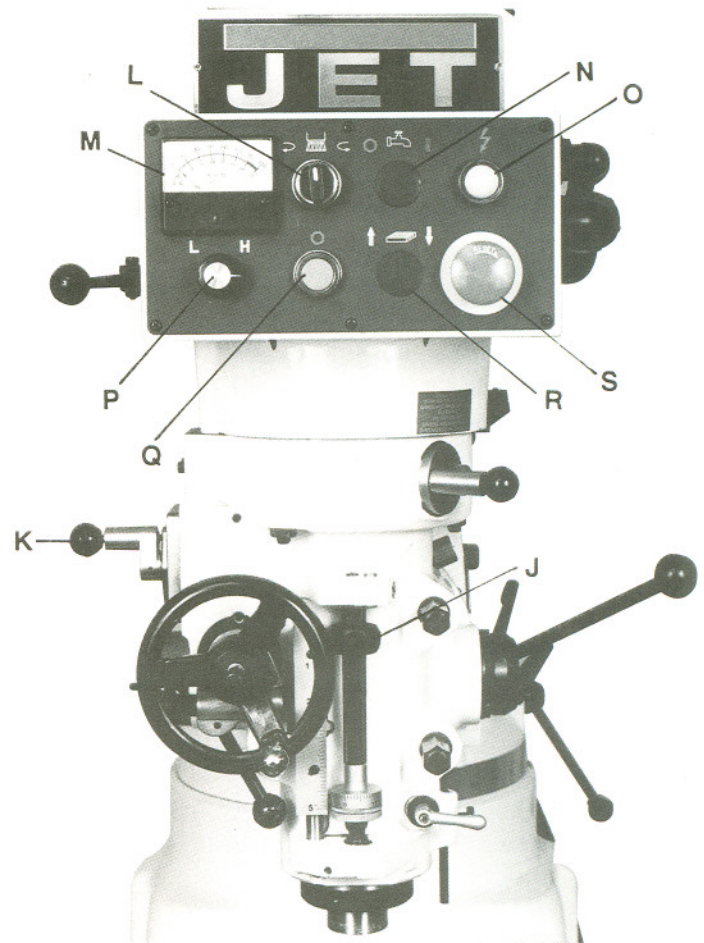


Fig.7

## Operation

### Operating Precautions

1. Be certain the spindle brake is released before starting the motor.
2. Rotate the spindle by hand to facilitate meshing of the clutch and gears.
3. **Do not** use the quill power feed at speeds above 3000 RPM.
4. 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.
5. The power feed can be used for drills up to 3/8" in diameter (in mild steel). Use manual feed for drills larger than 3/8".
6. 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.

### Setting Up for Fine Hand Feed

1. Disengage power feed by pulling out knob (A, Fig. 8) and moving lever to the right hole.
2. Locate the feed reversing knob (C, Fig. 8 & 9) in the center or neutral position.
3. Engage feed control lever (B, Fig. 8) by pulling away from the head assembly.

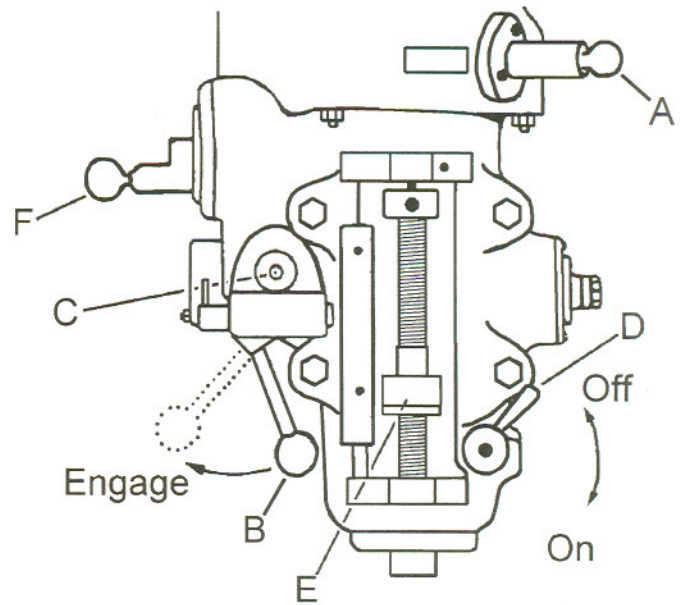


Fig.8

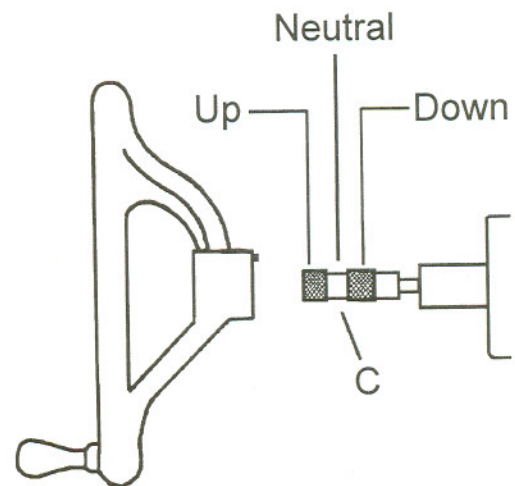


Fig.9

### Setting Up for Automatic Feed

1. Ensure quill lock (D, Fig. 8) is off by rotating counter-clockwise.
2. Set micrometer dial (E, Fig. 8) to desired depth.
3. Engage power feed lever (A, Fig. 8) by pulling out lock knob and moving lever to the left hole.
4. Select feed rate (F, Fig. 8).
5. Select feed direction (C, Fig. 8 & 9).
6. Engage feed trip lever (B, Fig. 8) by pulling away from head assembly.

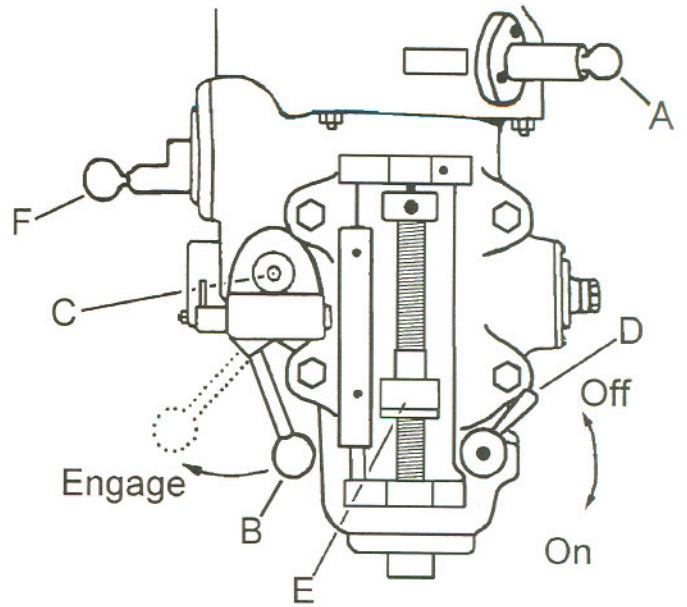


Fig. 8

### Adjustments

#### Feed Trip Adjustment

1. Loosen locknut (A, Fig. 10).
2. Engage trip handle (C, Fig. 10) by pulling away from head assembly.
3. Adjust micro nuts (E, Fig. 10) against quill stop (B, Fig. 10).
4. Slowly turn adjusting screw (D, Fig. 10) until lever (C, Fig. 10) trips.
5. Tighten locknut (A, Fig. 10).

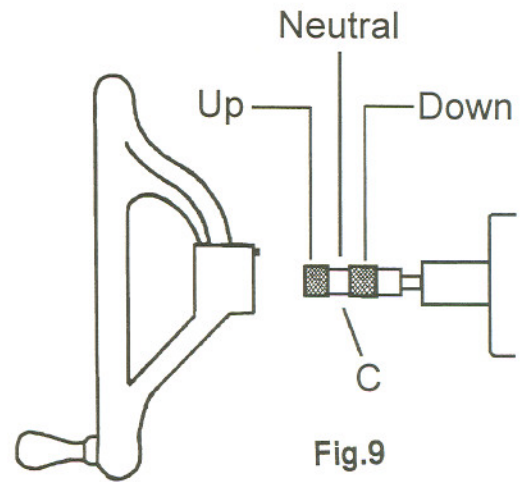


Fig. 9

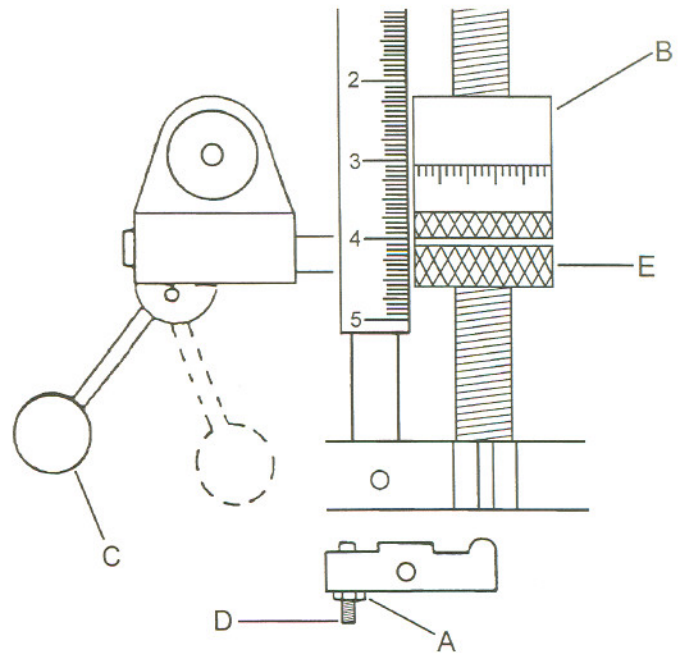


Fig. 10

### **Knee Gib Adjustment**

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

Adjust gib screws through wiper on either side of the knee where it meets the column.

### **Saddle Adjustment**

Adjust gib screw found on the left front side of the carriage.

### **Table Adjustment**

Adjust gib screws found on the sides of the table toward the front of the carriage.

### **Head Alignment**

The scales on the ram adapter and head rotation 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".

### **Delta Variable Frequency Drive**

Please refer to your Delta manual for any questions concerning this unit.

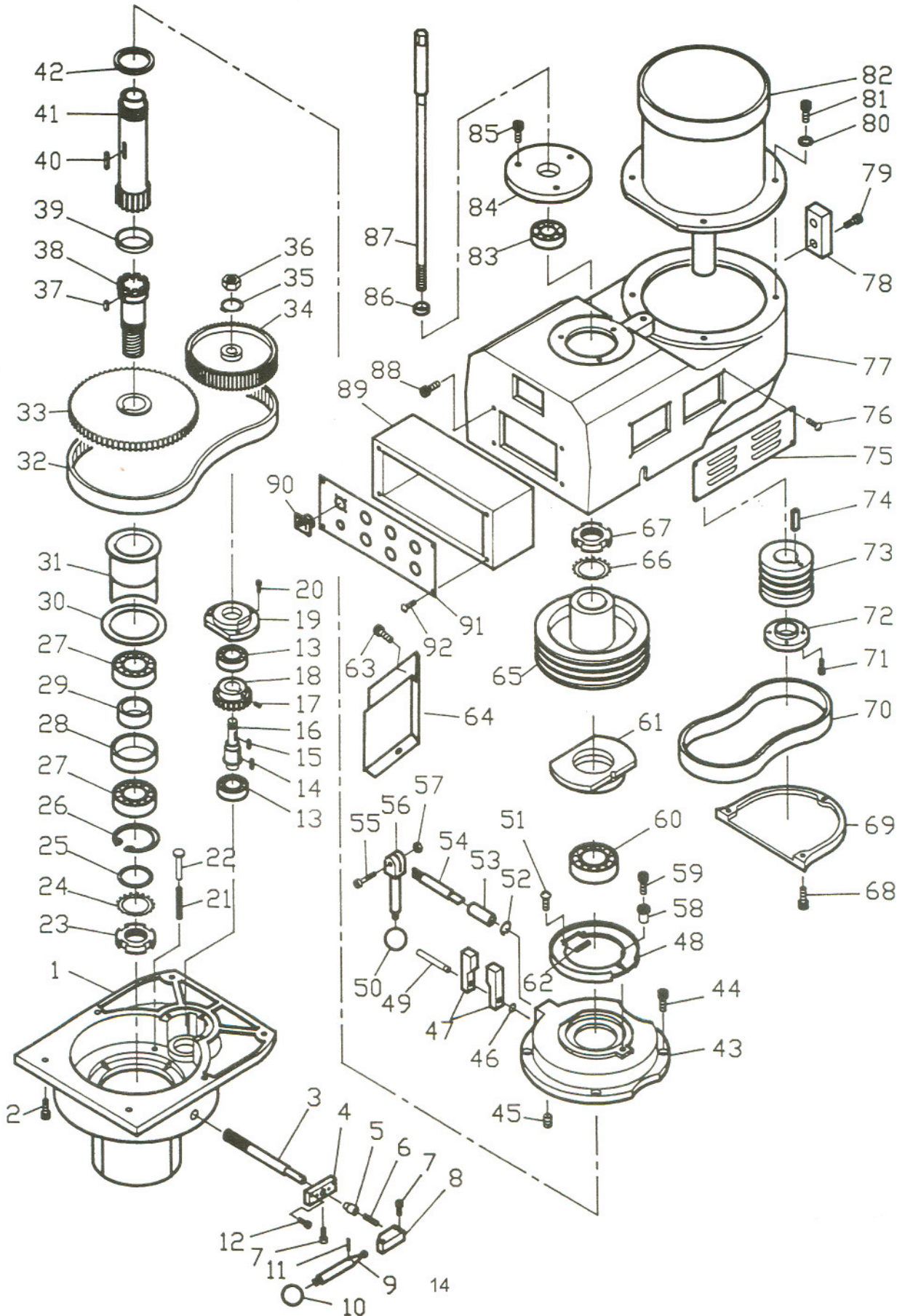
**Note: This drive is not dual voltage.**

**Parts List for the JTM-1050 EVS Turret Mill  
Inverter Speed Head Assembly**

Index No.	Part No.	Description	Size	Qty.
1	PVS-082	Housing		1
2	TS-1503051	Hex Socket Cap Screw	M6*20	6
3	PVS-087	Gear Shaft Pinion		1
4	PVS-089	Detent Plate		1
5	PVS-090	Bearing Stop		1
6	PVS-091	Spring		1
7	TS-1503011	Hex Socket Cap Screw	M5*14	3
8	PVS-092	Pinion Block		1
9	PVS-094	Pinion Crank		1
10	PVS-099	Plastic Ball		1
11	IVS-011	Spring Pin	3*20	1
12	TS-1502041	Hex Socket Cap Screw	M5*16	3
13	BB-6203ZZ	Ball Bearing	6203ZZ	2
14	KEY5518	Key	5*5*18	1
15	KEY5515	Key	5*5*15	1
16	PVS-067	Counter Shaft		1
17	TS-1523011	Set Screw	M6*6	1
18	PVS-066	Bull Gear		1
19	PVS-064	Bearing Housing		1
20	TS-1502051	Hex Socket Cap Screw	M5*20	3
21	PVS-084	Spring		3
22	PVS-102	Spring Shaft		3
23	PVS-081	Nut		1
24	PVS-109	Lock Washer		1
25	PVS-103	Washer		1
26	PVS-080	Snap Ring	C-62	1
27	BB-6908ZZ	Ball Bearing	6908ZZ	2
28	PVS-079	Bearing Washer		1
29	PVS-078	Bearing Washer		1
30	PVS-076	Washer		1
31	PVS-075	Rack Cup		1
32	PVS-063	Timing Belt	225L100	1
33	PVS-074	Gear		1
34	PVS-062	Timing Belt Pulley		1
35	IVS-035	Spring Washer	5/8"	1
36	PVS-061	Nut	5/8"-18NF	1
37	KEY8712	Key	8*7*12	1
38	PVS-073	Spindle Gear Hub		1
39	PVS-100	Collar		1
40	KEY7740	Key	7*7*40	1
41	4VS-H003	Spindle Pulley Hub		1
42	IVS-042	Collar		1
43	PVS-050	Lower Housing Cover		1
44	TS-1503051	Hex Socket Cap Screw	M6*20	4
45	TS-1523011	Set Screw	M6*6	1
46	IVS-046	Snap Ring	S-8	1
47	PVS-059	Brake Stud		2
48	PVS-047	Brake Lining		1

49	PVS-058	Brake Finger Pivot Stud		1
50	PVS-099	Plastic Ball		2
51	IVS-051	Round Head Screw		4
52	IVS-052	Snap Ring	S-12	1
53	PVS-052	Brake Shaft Sleeve		1
54	PVS-053	Brake Lock Shaft		1
55	TS-1503061	Hex Socket Cap Screw	M6*25	1
56	PVS-054	Brake Lock Block		1
57	TS-1540041	Nut	M6	1
58	PVS-048	Lock Screw		1
59	TS-1502041	Hex Socket Cap Screw	M5*16	1
60	BB-6010ZZ	Ball Bearing	6010ZZ	1
61	PVS-046	Bearing Cover		1
62	PVS-049	Brake Spring		2
63	TS-1502031	Hex Socket Cap Screw	M5*12	2
64	IVS-064	Brake Ring		1
65	4VS-002	Pulley		1
66	IVS-066	Washer		1
67	IVS-067	Lock Nut		1
68	TS-1502051	Hex Socket Cap Screw	M5*20	3
69	PVS-011	Motor Pulley Cover		1
70	IVS-070	Belt		1
71	TS-1502041	Hex Socket Cap Screw	M5*16	6
72	1020-H071	Lock Ring		1
73	1020-H070	Motor Pulley		1
74	KEY10830	Key	10*8*30	1
75	PVS-101	Cover		2
76	IVS-076	Round Head Screw		8
77	PVS-001	Housing		1
78	SP-060	Block		1
79	TS-1504051	Hex Socket Cap Screw	M8*25	3
80	IVS-080	Spring Washer	M10	4
81	IVS-081	Hex Socket Cap Screw	M10*30	4
82	IVS-082	Inverter Motor	3HP/4P	1
83	BB-6007ZZ	Ball Bearing	6007ZZ	1
84	PVS-013	Cover		1
85	TS-1502041	Hex Socket Cap Screw	M5*16	3
86	PVS-115	Draw Bar Washer		1
87	PVS-114	Draw Bar		1
88	TS-1503021	Hex Socket Cap Screw	M6*10	4
89	4VSE187	Operation Box		1
90	IVS-090	R.P.M Indicator		1
91	4VSE186	Operation Panel		1
92	IVS-092	Round Head Screw		6

# Inverter Speed Head Assembly





## Head Assembly

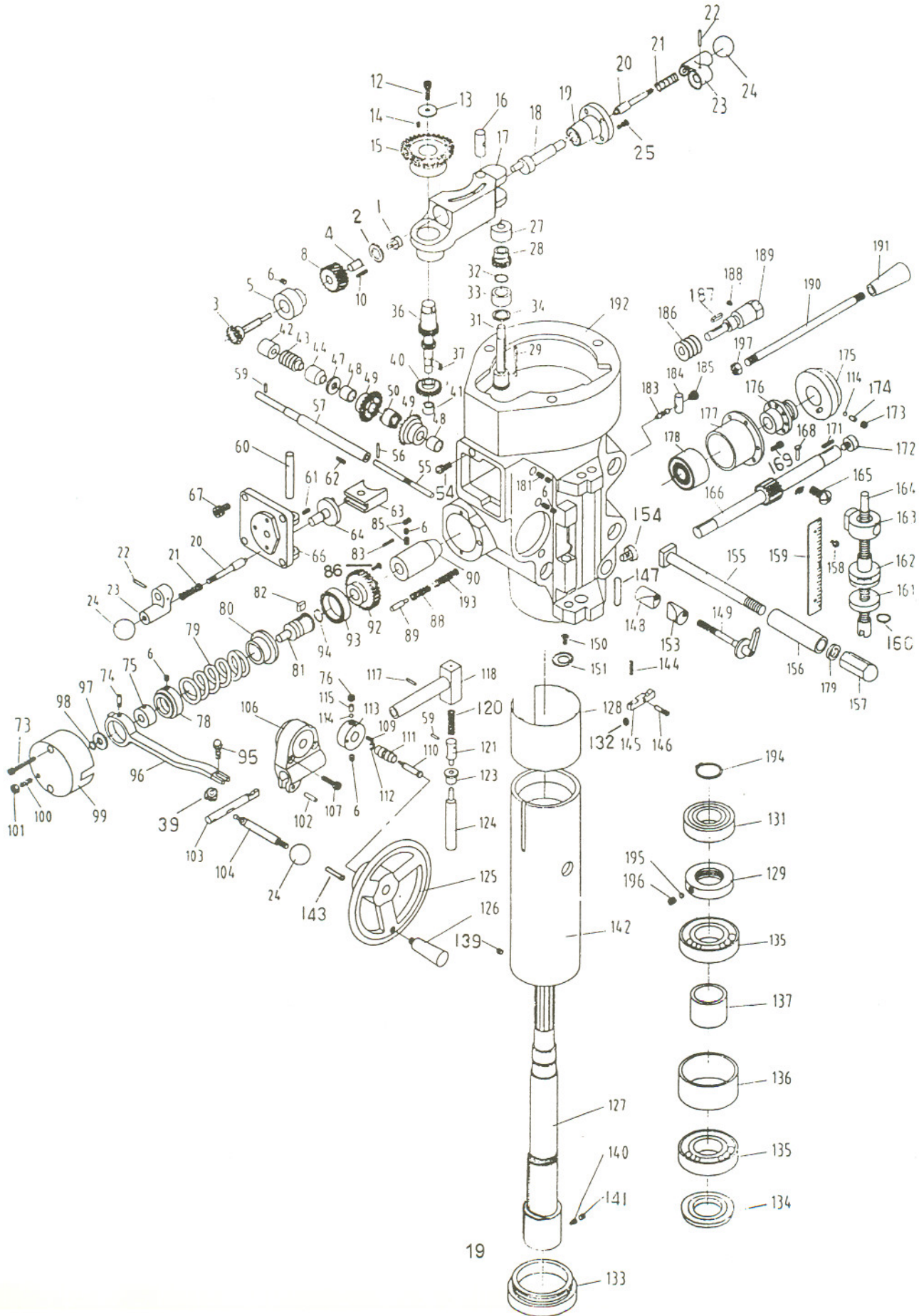
1	TS-1503031	Hex Socket Cap Screw	M6*12	1
2	1050B-2	Washer		1
3	1050B-3	Feed Bevel Pinion		1
4	1050B-4	Worm Gear Shaft Sleeve		1
5	1050B-5	Bushing		1
6	TS-1522011	Set Screw		1
8	1050B-8	Worm Gear		1
10	KEY3312	Key	3*3*12	1
12	TS-1504031	Hex Socket Cap Screw	M8*16	1
13	B-13	Washer		1
14	KEY3308	Key	3*3*8	2
15	B-15	Bevel Gear		1
16	B-16	Feed Engage Pin		1
17	1050B-17	Worm Gear Cradle		1
18	B-18	Worm Gear Cradle Shaft		1
19	1050B-19	Shaft Sleeve		1
20	B-20	Gear Shaft Plunger		2
21	B-21	Spring		2
22	1050B-22	Spring Pin	3*20	2
23	B-23	Shift Crank		2
24	B-24	Black Plastic Ball		3
25	TS-1503010	Hex Socket Cap Screw	M5x12	3
27	B-27	Bushing		1
28	B-28	Gear		1
29	KEY3345	Key	3*3*45	1
31	1050B-31	Gear Shaft		1
32	1050B-32	Snap Ring	S-16	1
33	1050B-33	Bevel Gear Bushing		1
34	1050B-34	Spacer		1
36	1050B-36	Gear		1
39	TS-1540031	Nut	M5	1
40	1050B-40	Feed Drive Gear		1
41	1050B-41	Needle Bearing		1
42	1050B-42	Bushing		1
43	1050B-43	Worm Gear		1
44	B-44	Bushing		1
47	B-47	Washer		1
48	B-48	Bushing		2
49	B-49	Bevel Gear		2
50	B-50	Feed Reverse Clutch		1
54	TS-1503061	Hex Socket Cap Screw	M6*25	1
55	B-55	Reverse Clutch Rod		1
56	B-56	Spring Pin	3*20	1
57	B-57	Feed Worm Shaft		1
58	TS-1523011	Set Screw	M6*6	1
59	B-59	Spring Pin	3*12	2
60	B-60	Chip Guards		1
61	TS-1522031	Set Screw	M5*10	1
62	KEY3315	Key	3*3*15	2
63	B-63	Feed Gear Shift Fork		1
64	B-64	Gear Shift Crank		1
66	B-66	Cluster Gear Cover		1

67	TS-1502031	Hex Socket Cap Screw	M5*12	4
73	TS-1502081	Hex Socket Cap Screw	M5*35	2
74	B-74	Clutch Ring Pin		2
75	B-75	Clutch Ring		1
76	TS-1523021	Set Screw	M6*8	1
78	B-78	Clutch Locknut		1
79	B-79	Safety Clutch Locknut		1
80	B-80	Overload Clutch		1
81	B-81	Overload Clutch Sleeve		1
82	KEY5813	Key	5*8*13	1
83	B-83	Hex Socket Head Bolt		3
85	TS-1523011	Set Screw	M6*6	2
86	B-86	Cross Plate Screw	M4*16	4
88	B-88	Spring		1
89	B-89	Spring Plunger		1
90	B-90	Bushing		1
92	B-92	Worm Gear		1
93	B-93	Clutch Ring		1
94	B-94	Snap Ring	S-10	1
95	TS-1502051	Hex Socket Cap Screw	M5*20	1
96	B-96	Clutch Trip Lever		1
97	B-97	Clutch Washer		1
98	B-98	Snap Ring	S-10	1
99	B-99	Clutch Arm Cover		1
100	C-19-1	Set Screw	M6*16	1
101	TS-1540041	Nut	M6	1
102	B-102	Spring Pin	5*18	1
103	B-103	Cam Rod		1
104	B-104	Trip Handle		1
106	B-106	Feed Trip Bracket		1
107	TS-1503051	Hex Socket Cap Screw	M6*20	1
108	TS-1523031	Set Screw	M6*10	1
109	KEY3310	Key	3*3*10	1
110	B-110	Knob Stud		1
111	B-111	Reverse Knob		1
112	B-112	E-Ring	E-6	1
113	B-113	Handle Wheel Clutch		1
114	B-114	Steel Ball	3/16"	2
115	B-115	Compression Spring		2
116	B-116	Set Screw	M8*6	1
117	B-117	Spring Pin	3*15	1
118	B-118	Cam Rod Sleeve		1
119	B-119	Spring Pin	3*12	1
120	B-120	Compression Spring		1
121	B-121	Trip Plunger		1
123	B-123	Bushing		4
124	B-124	Feed Trip Plunger		1
125	B-125	Handle Wheel		1
126	B-126	Handle		1
127	B-127	Spindle		1
128	B-128	Quill Skirt		1
129	B-129	Locknut		1
131	BB-6206ZZ	Ball Bearing	6206ZZ	1
132	B-132	Nut	M4	1

133	B-133	Nose Piece		1
134	B-134	Spindle Dirt Shield		1
135	BB-7207C	Angular Bearing	7207	1
136	B-136	Spacer		1
137	B-137	Spacer		1
138	BB-7207C	Angular Bearing	7207	1
139	B-139	Set Screw		1
140	B-140	Set Screw		1
141	TS-1523011	Set Screw	M6*6	1
142	B-142	Quill		1
143	B-143	Spring Pin	3*16	1
144	B-144	Set Screw	M4*20	1
145	B-145	Feed Trip Lever		1
146	B-146	Trip Lever Pin		1
147	B-147	Indicator Rod		1
148	B-148	Quill Lock Sleeve		1
149	B-149	Lock Handle		1
150	B-150	Round Head Screw	M5*8	2
151	B-151	Washer	M5	2
153	B-153	Quill Lock Sleeve		1
154	B-154	Indicator Rod Screw		1
155	B-155	T-Bolt		4
156	B-156	Spacer		4
157	B-157	Adapter Nut		4
158	B-158	Round Head Screw		2
159	B-159	Micrometer Scale		1
160	B-160	Snap Ring	S-16	1
161	B-161	Quill Micro-Stop Nut		1
162	B-162	Quill Micro-Stop Nut		1
163	B-163	Quill Stop Knob		1
164	B-164	Quill Micro-Stop Nut		1
165	B-165	Round Head Screw	M10*15	1
166	B-166	Quill Pinion Shaft		1
168	B-168	Pin		1
169	TS-1503010	Hex Socket Cap Screw	M5*12	2
171	KEY3320	Key	3*3*20	1
172	B-172	Pinion Shaft Hub Screw		1
173	B-173	Set Screw	5/16"*1/4"	1
174	B-174	Compression Spring		1
175	B-175	Handle Hub		1
176	B-176	Hub Sleeve		1
177	B-177	Spring Cover		1
178	B-178	Clock Spring		1
179	B-179	Washer		4
181	TS-1523041	Set Screw	M6*12	2
183	B-183	Reverse Trip Ball Lever		1
184	B-184	Reverse Trip Plunger		1
185	B-185	Trip Ball Lever Screw		1
186	B-186	Worm Gear		1
187	KEY4418	Key	4*4*18	1
188	B-188	Set Screw		1
189	B-189	Worm Shaft		1
190	B-190	Pinion Shaft Hub Handle		1
191	B-191	Black Plastic Ball		1

192	B-192	Quill Housing		1
193	B-193	Compression Spring		1
194	B-194	Snap Ring	S-30	1
195	B-195	Bush		1
196	TS-1523011	Set Screw	M6*6	1
197	B-197	Nut		1

# Head Assembly

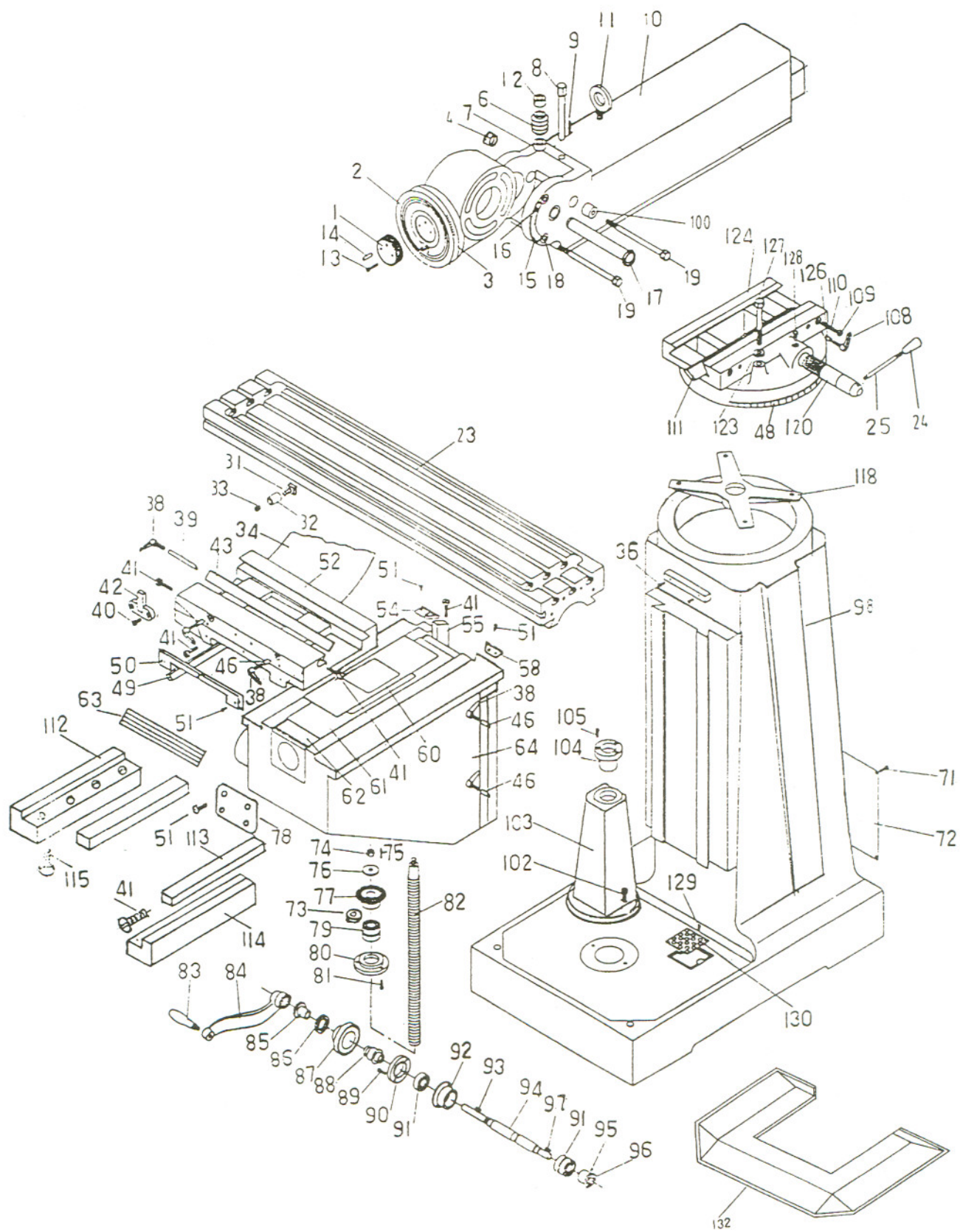


## Base Assembly

1	1050C-1	Worm Washer		1
2	1050C-2	Ram Adapter		1
3	1050C-3	Adapter Scale		1
4	1050C-4	Lock Nut		1
6	1050C-6	Worm Gear		1
7	1050C-12	Collar		1
8	1050C-8	Worm Shaft		1
9	KEY5550	Key	5*5*50	1
10	1050C-10	Ram		1
11	1050C-11	Hook	3/4"	1
12	C-7-1	Washer		1
13	TS-1504061	Hex Socket Cap Screw	M8*30	2
14	1050C-14	Spring Pin		1
15	1050C-15	Angle Plate		1
16	1050C-16	Rivet		10
17	1050C-17	Adapter Pivot Stud		1
18	C-18	Washer		3
19	C-19	Locking Bolt		3
23	C-23	Table		1
31	C-31	T-Bolt		2
32	C-32	Table Stop Piece		2
33	C-33	Hex Nut	3/8"-16NC	2
34	C-34	Chip Guard		1
36	C-36	Pan Head Screw	3/16"*3/8"	4
38	C-38A	Saddle Lock Bolt		5
39	C-39	Saddle Lock Plunger		1
40	C-40	Hex Socket Cap Screw		2
41	C-41	Adjusting Screw		10
42	C-42	Table Stop Bracket		1
43	C-43	Gib		1
46	C-46	Table Lock Plunger		4
49	C-49	Saddle Knee Gib		1
50	C-50-1	Wiper		2
51	C-51	Pan Head Screw		18
52	C-52	Saddle		1
54	C-54	Knee Wiper Felt		1
55	C-55	Knee Column Gib		1
58	C-58	Knee Wiper Felt		1
60	C-60	Chip Guards		1
61	C-61	Chip Guards		1
62	C-62	Chip Guards		1
63	C-63	Chip Guards		1
64	C-64	Knee		1
71	C-71	Pan Head Screw		8
72	C-72	Cover		1
73	C-23-1	Washer		1
74	C-74	Nut	1/2"-20NF	1
75	KEY5525	Key	5*5*25	1
76	C-76	Washer		1
77	C-77	Bevel Gear		1
78	C-78	Front Cover		1
79	BB-5305ZZ	Ball Bearing	5305	1

80	C-80	Bearing Stop	1
81	TS-1503051	Hex Socket Cap Screw	M6*20 3
82	C-82	Leadscrew	1
83	C-83	Handle	1
84	C-84	Elevating Crank	1
85	C-85	Gear Shear Clutch	1
86	C-86	Dial Lock Nut	1
87	C-87	Dial	1
88	C-88	Dial Holder	1
89	TS-1503051	Hex Socket Cap Screw	M6*20 3
90	C-90	Bearing Stop	1
91	BB-6204ZZ	Ball Bearing	6204ZZ 2
92	C-92	Bearing Stop	1
93	KEY3318	Key	3*3*18 1
94	C-94	Shaft	1
95	C-95	Grub Set Screw	1
96	C-96	Bevel Gear	1
97	KEY4418	Key	4*4*18 1
98	C-98	Column	1
100	C-19-1	Collar	1
102	TS-1505051	Hex Socket Cap Screw	M10*35 2
103	C-103	Lead Screw Housing	1
104	C-82-1	Lead Screw Nut	1
105	TS-1503051	Hex Socket Cap Screw	M6*20 3
108	C-38A	Lock Bolt	2
109	C-109	Nut	3/8" 2
110	C-110	Set Screw	2
111	C-111	Gib	1
112	C-112	Gib Holder (L)	1
113	C-113	Gib	1
114	C-114	Gib Holder(R)	1
115	TS-1505051	Hex Socket Cap Screw	M10*35 8
118	C-118	Spider	1
120	C-120	Ram Pinion	1
123	C-123	Spring Washer	4
124	C-124	Turret	1
126	C-126	Ram Lock Plunger	2
127	C-127	Locking Bolt	4
128	C-128	Ram Pinion Set Screw	1
129	C-129	Rivet	2
130	C-130	Strainer	1
131	JM-1050	Stripe Decal (not shown)	1
132	C-132	Chip Pan	1

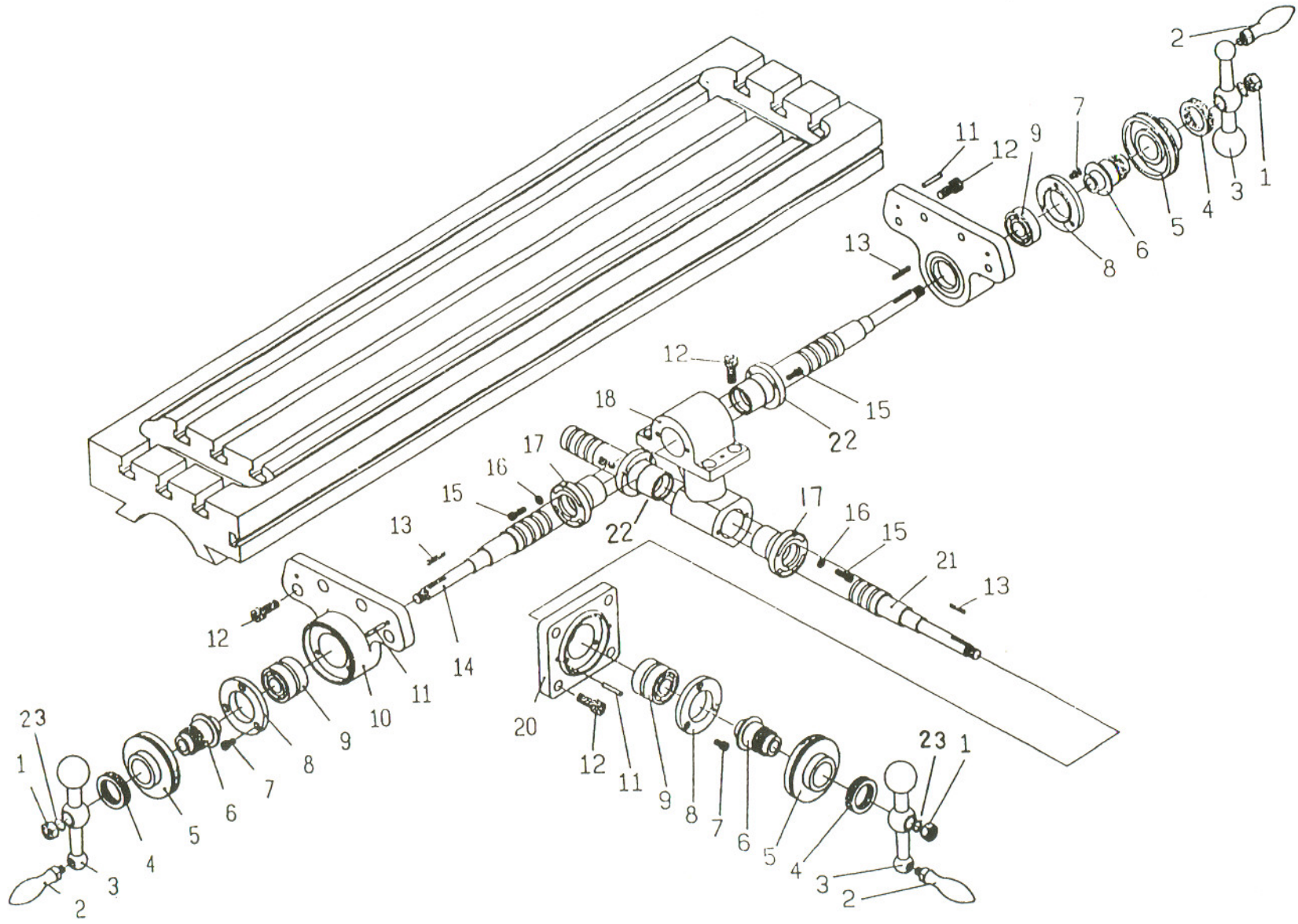
# Base Assembly





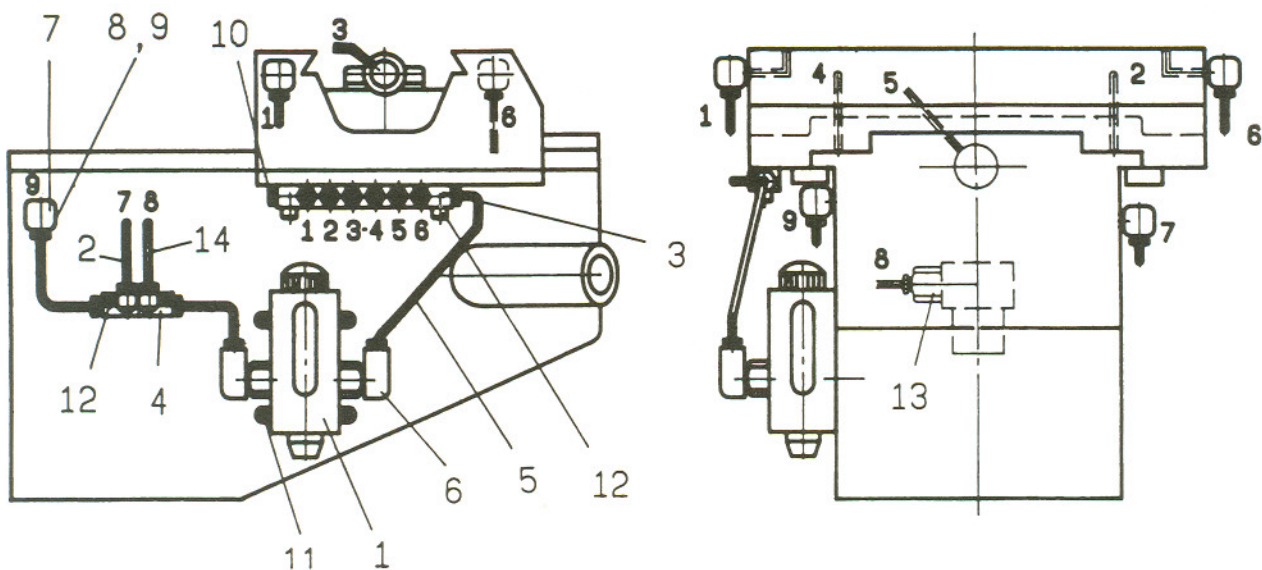
## Leadscrew Assembly

1.....	D-1.....	Nut.....	1/2"-20NF.....	3
2.....	D-2.....	Handle.....		3
3.....	D-3.....	Ball Crank.....		3
4.....	D-4.....	Dial Lock Nut.....		3
5.....	D-5.....	Dial.....		3
6.....	D-6.....	Dial Holder.....		3
7.....	TS-1503031.....	Hex Socket Cap Screw.....	M6*12.....	9
8.....	C-90.....	Bearing Stop.....		3
9.....	BB-6204ZZ.....	Ball Bearing.....	6204ZZ.....	5
10.....	D-10.....	Bearing Bracket.....		2
11.....	D-11.....	Spring Pin.....	.5*25.....	6
12.....	TS-1505031.....	Hex Socket Cap Screw.....		16
13.....	KEY3325.....	Key.....	3*3*25.....	2
13A.....	KEY3318.....	Key.....	3*3*18.....	2
14.....	D-14.....	Leadscrew.....		1
15.....	TS-1503061.....	Hex Socket Cap Screw.....		10
16.....	H-9.....	Washer.....		4
17.....	D-17.....	Feed Screw Nut.....		2
18.....	D-18.....	Feed Nut Bracket.....		1
20.....	D-20.....	Cross Bearing Bracket.....		1
21.....	D-21.....	Cross Feed Screw.....		1
22.....	D-22.....	Cross Feed Nut.....		2
23.....	D-23.....	Spring Washer.....	1/2".....	3



Leadscrew Assembly

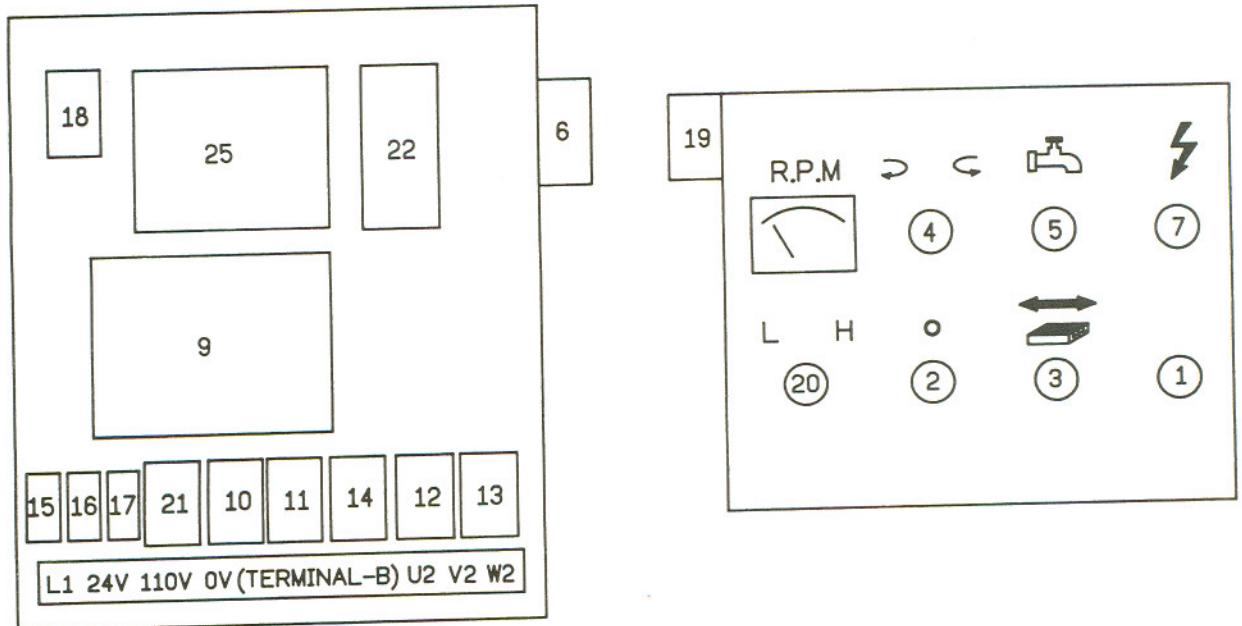
## One Shot Lubrication System



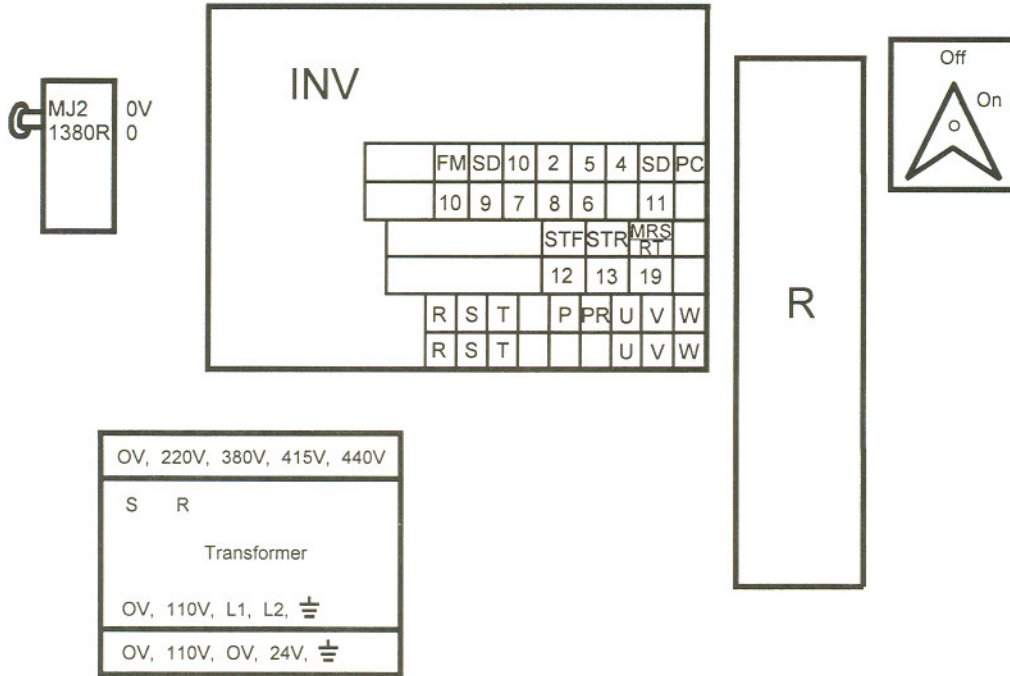
1	.....	CLA-8	.....	Handle Oiler	.....	1
2	.....	ALMP-04	.....	Aluminum Piece	.....	13.5
3	.....	A-8	.....	Oil Regulation Distributor	.....	1
4	.....	A-4	.....	Oil Regulation Distributor	.....	1
5	.....	A-5	.....	Flexible Steel Tube	.....	4*550
6	.....	PH-4011	.....	Elbow Joint	.....	2
7	.....	PI-401	.....	Elbow Joint	.....	6
8	.....	PA-4	.....	Thimble Nut	.....	20
9	.....	PB-4	.....	Thimble	.....	20
10	.....	PG-004	.....	Union	.....	1
11	.....	JTM4VS-BUTW1458	.....	Screw	.....	M6*14
12	.....	TS-1502061	.....	Hex Socket Cap Screw	.....	M5*25
13	.....	PD-401	.....	Straight Joint	.....	1
14	.....	A-14	.....	Nylon Piece	.....	4*700

## Electrical Panel

1	1050EVS-SB1	Emergency Stop	1
2	1050EVS-SB2	Spindle Stop	1
3	1050EVS-SB3	Power Feed On	1
4	1050EVS-SA1	Fwd.-0-Rev. Spindle On	1
5	1050EVS-SA2	Pump Select Switch	1
6	1050EVS-MS	Power On/Off	1
7	1050EVS-L1	Power Lamp	1
8	1050EVS-L2	Power Feed Lamp	1
9	1050EVS-TR	Transformer	1
10	1050EVS-M1	Motor Fwd. Contact Relay	1
11	1050EVS-M2	Motor Rev. Contact Relay	1
12	1050EVS-M3	Power Feed Contact Relay	1
13	1050EVS-M4	Pump Motor Contact Relay	1
14	1050EVS-M5	Inv. Motor Contact Relay	1
15	1050EVS-FU1	High Voltage Fuse	1
16	1050EVS-FU2	Low Voltage Fuse	1
17	1050EVS-FU3	Low Voltage Fuse	1
18	1050EVS-LS1	Door Limit Switch	1
19	1050EVS-LS2	Brake Limit Switch	1
20	1050EVS-VR1	Speed Adjuster Spindle	1
21	1050EVS-R1	Relay	1
22	1050EVS-R	Special Regenerative Brake	1
23	1050EVS-L	Work Lighting	1
24	1050EVS-PF	Power Feed	1
25	1050EVS-INV	Spindle Control	1



### Electrical Panel



			50	14				15				15				1				16				
S	110V	L2			19	R	11	3	15	R	11	3	15	R	11	3	14	U	V	W		R	S	T
FU1 3A	FU2 5A	FU3 3A	R1			M1 MOTOR FWD			M2 MOTOR REV			M5 INV MOTOR			M3 POWER FEED			M4 PUMP MOTOR						
S	1	24V	0		11	220V	12	4	5	220V	13	5	4	U	V	W		110V	0V	17		U <sub>2</sub>	V <sub>2</sub>	W <sub>2</sub>
			0	18				50				50				50				0				0

L1, 24V, 110V, 0V, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 16, 17, 18, 220V, S, U, W,  $\text{⏏}$   $\text{⏏}$  U<sub>2</sub>, V<sub>2</sub>, W<sub>2</sub>, R, S, T,  $\text{⏏}$

Wiring Diagram

The JTM-1050EVS mill is pre-wired from the factory. Stock Number 690060 is Pre-wired 230V. Stock Number 690062 is Pre-wired 460V. This machine is not dual voltage.

