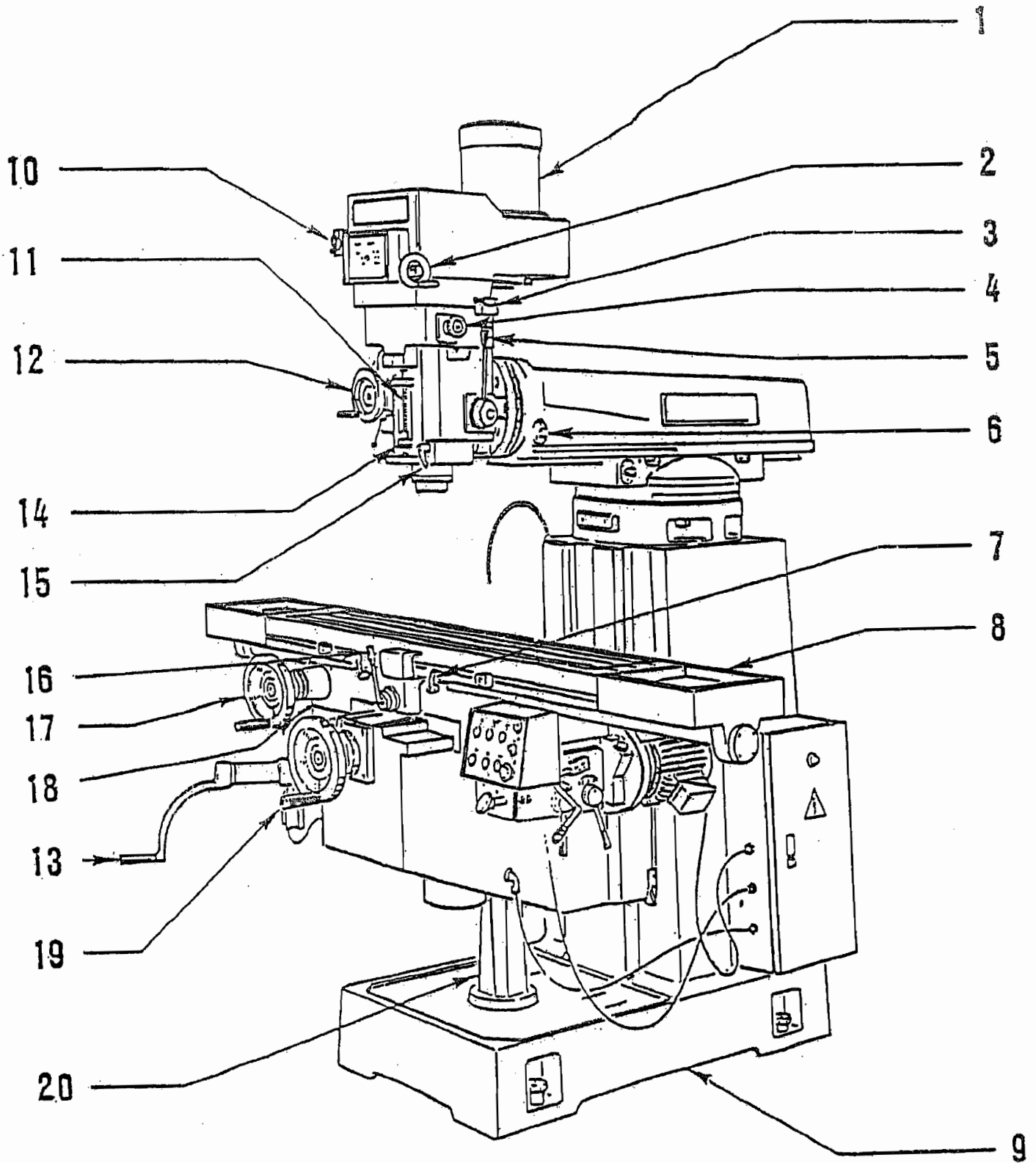


# LEGEND OF THE MACHINE

1. MOTOR
2. SPEED SELECTING HANDWHEEL
3. SPINDLE RANGE SELECTOR
4. AUTO. QUILL FEED ENGAGEMENT
5. QUILL FEED HANDLE
6. RAM ADJUSTMENT HANDLE
7. TABLE LOCK LEVER
8. TABLE
9. BASIC
10. CONTROL SWITCH
11. FEED DEPTH CONTROL SCREW
12. FINE FEED HANDWHEEL
13. ELEVATING FEED HANDLE
14. FEED DEPTH CONTROL RING
15. QUILL CLAMP LEVER
16. LONGITUDINAL FEED CONTROL LEVER
17. LONGITUDINAL FEED HANDWHEEL
18. SADDLE LOCK HANDLE
19. CROSS FEED HANDWHEEL
20. ELEVATING SCREW HOUSING

# LEGEND OF THE MACHINE

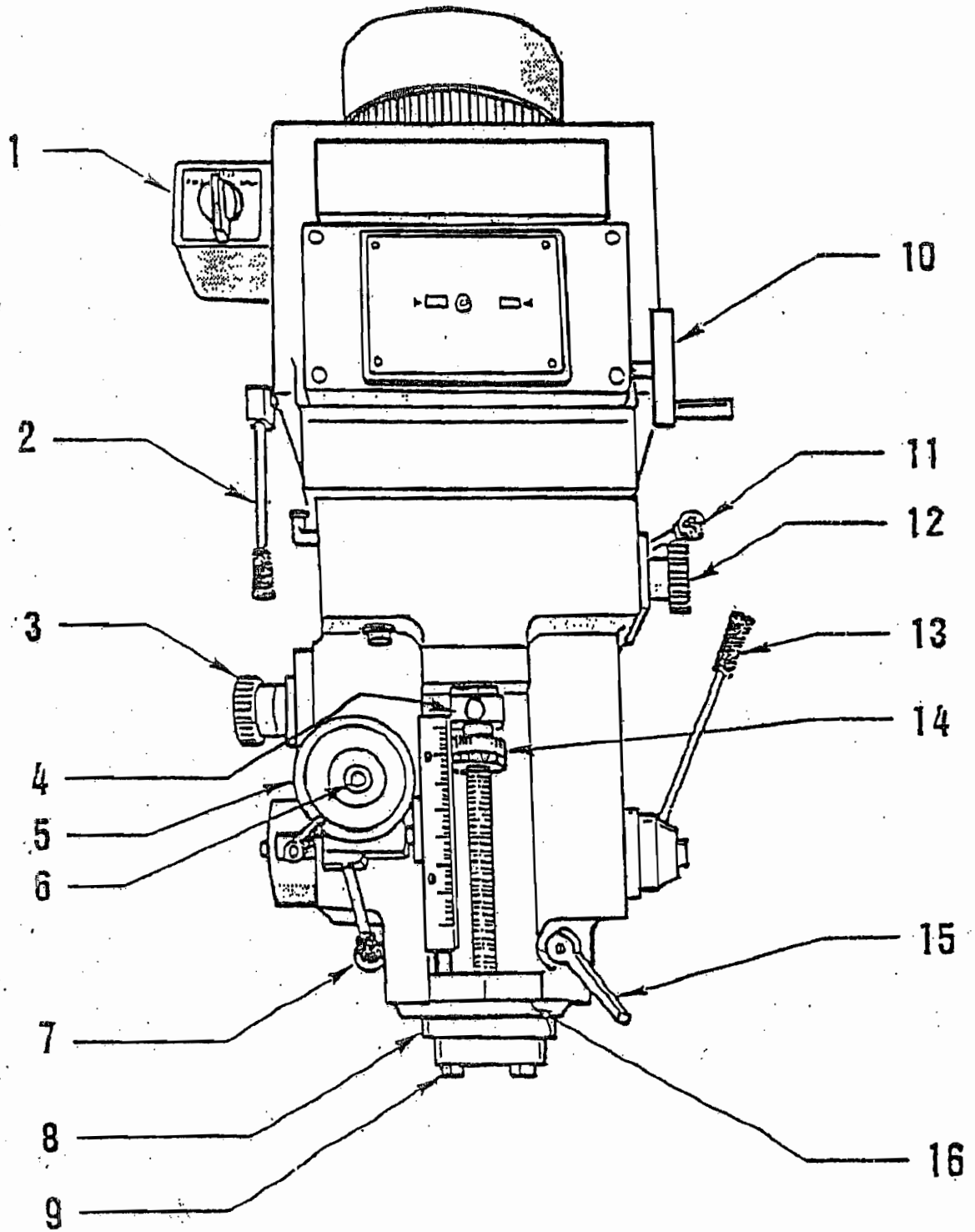


# LEGEND OF THE MACHINE

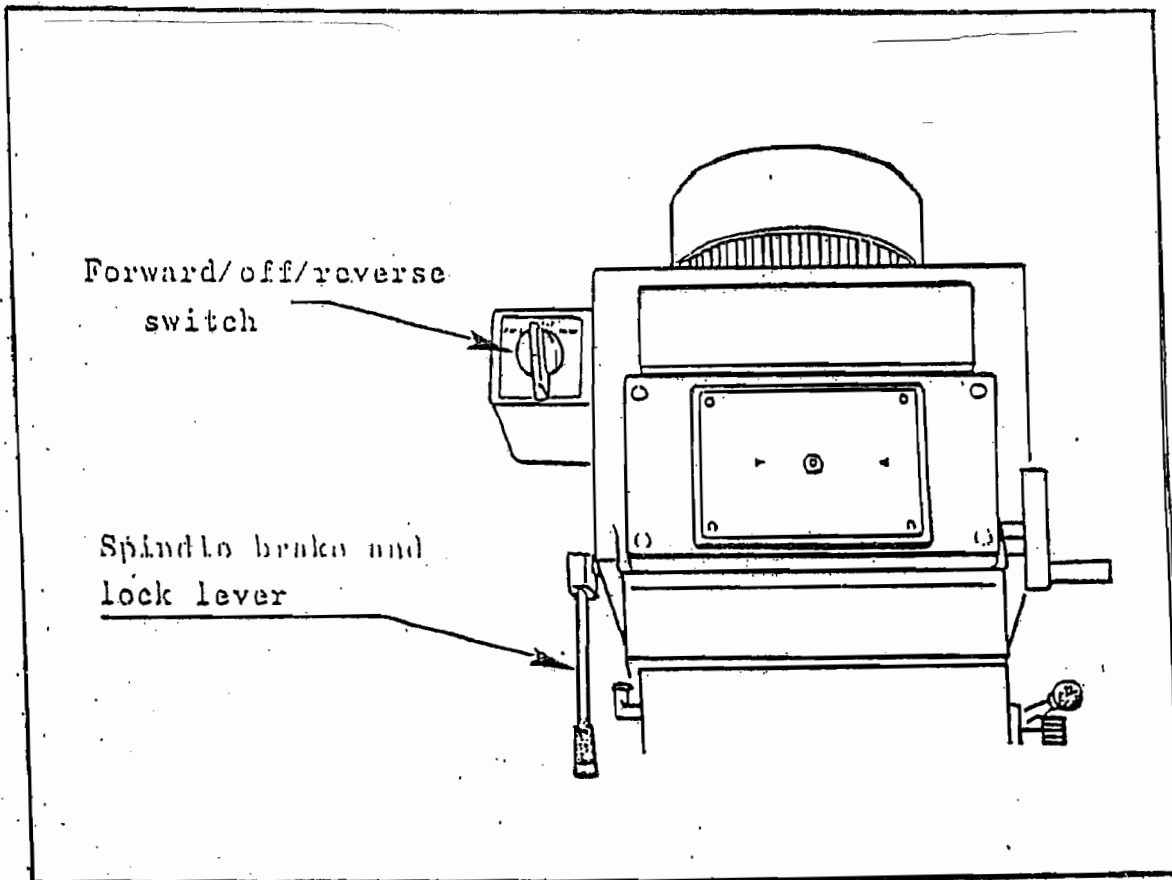
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1. FORWARD/OFF/REVERSE SWITCH
2. SPINDLE BRAKE AND LOCK LEVER
3. FEED RATE SELECTOR
4. QUILL DEPTH STOP
5. FINE FEED HANDWHEEL
6. FEED REVERSE KNOB
7. FEED ENGAGEMENT LEVER
8. QUILL
9. SPINDLE
10. SPEED SELECTING HANDWHEEL
11. SPINDLE RANGE SELECTOR
12. AUTO. QUILL FEED ENGAGEMENT
13. QUILL FEED HANDLE
14. MICROMETER DEPTH CONTROL
15. QUILL CLAMP LEVER
16. ALIGNMENT REFERENCE FACE

# LEGEND OF THE MACHINE



# STARTING



## STARTING:

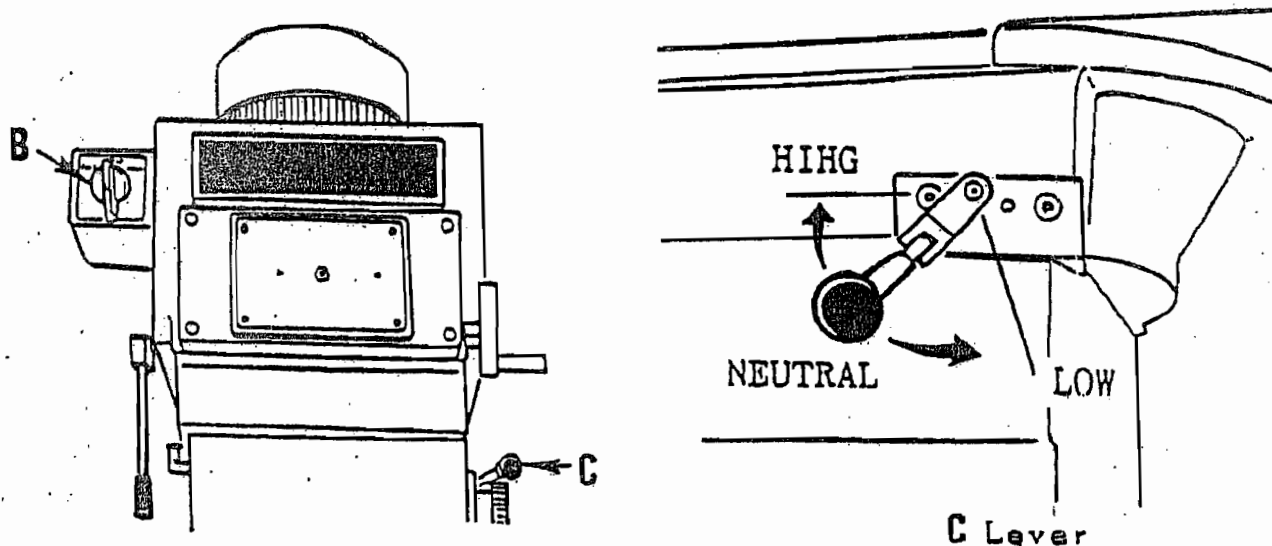
1. CONNECT POWER
2. TURN SWITCH TO THE REQUIRED POSITION  
( FORWARD OR REVERSE )

## STOPPING:

1. STOPPING FEEDING
2. TURN SWITCH TO "OFF"
3. TURN SPINDLE BRAKE LEVER TO "BRAKE" UNTILL SPINDLE STOPS

# SPEED CHANGING

DO NOT CHANGE RANGE WHILE THE SPINDLE IS RUNNING.



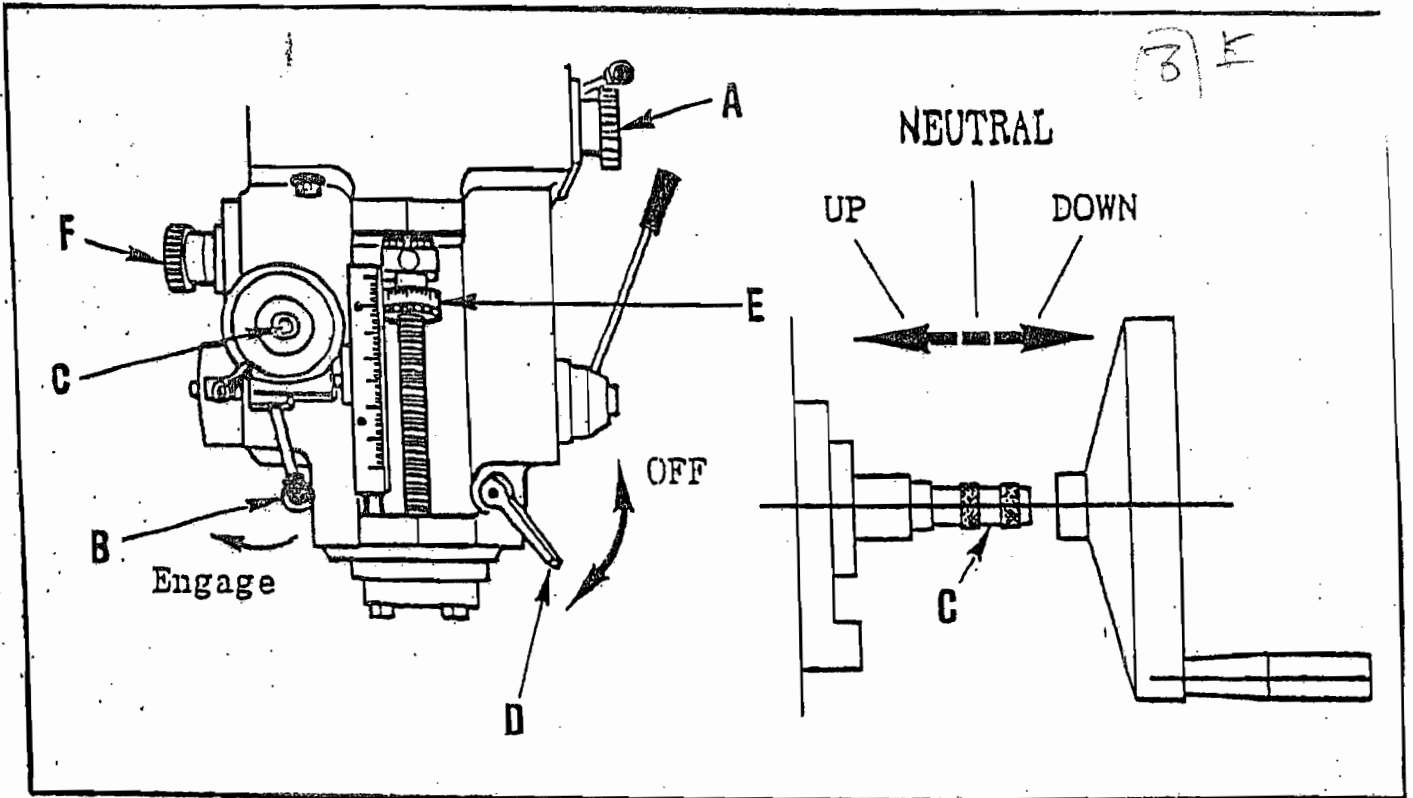
## A. FROM DIRECT DRIVE TO BACK GEAR DRIVE:

1. SWITCH "B" TO "STOP"
2. MOVE LEVER "C" THROUGH "NEUTRAL" TO "LOW"  
( IT REVERSES SPINDLE ROTATION )
3. SWITCH "B" TO "LOW"

## B. FROM BACK GEAR DRIVE TO DIRECT DRIVE:

1. SWITCH "B" TO "STOP"
2. MOVE LEVER "C" THROUGH "NEUTRAL" TO "HIGH"
3. ROTATE SPINDLE WITH HANDS UNTIL CLUTCHES ARE FELT TO ENGAGE
4. SWITCH "B" TO "HIGH"

# QUILL



## A. FINE HAND FEEDING:

1. DISENGAGE AUTO. QUILL FEED "A"
2. LOCATE "C" IN THE POSITION OF "NEUTRAL"
3. ENGAGE FEED TRIP LEVER "B"
4. NOW THE QUILL IS UNDER HANDWHEEL CONTROLLED

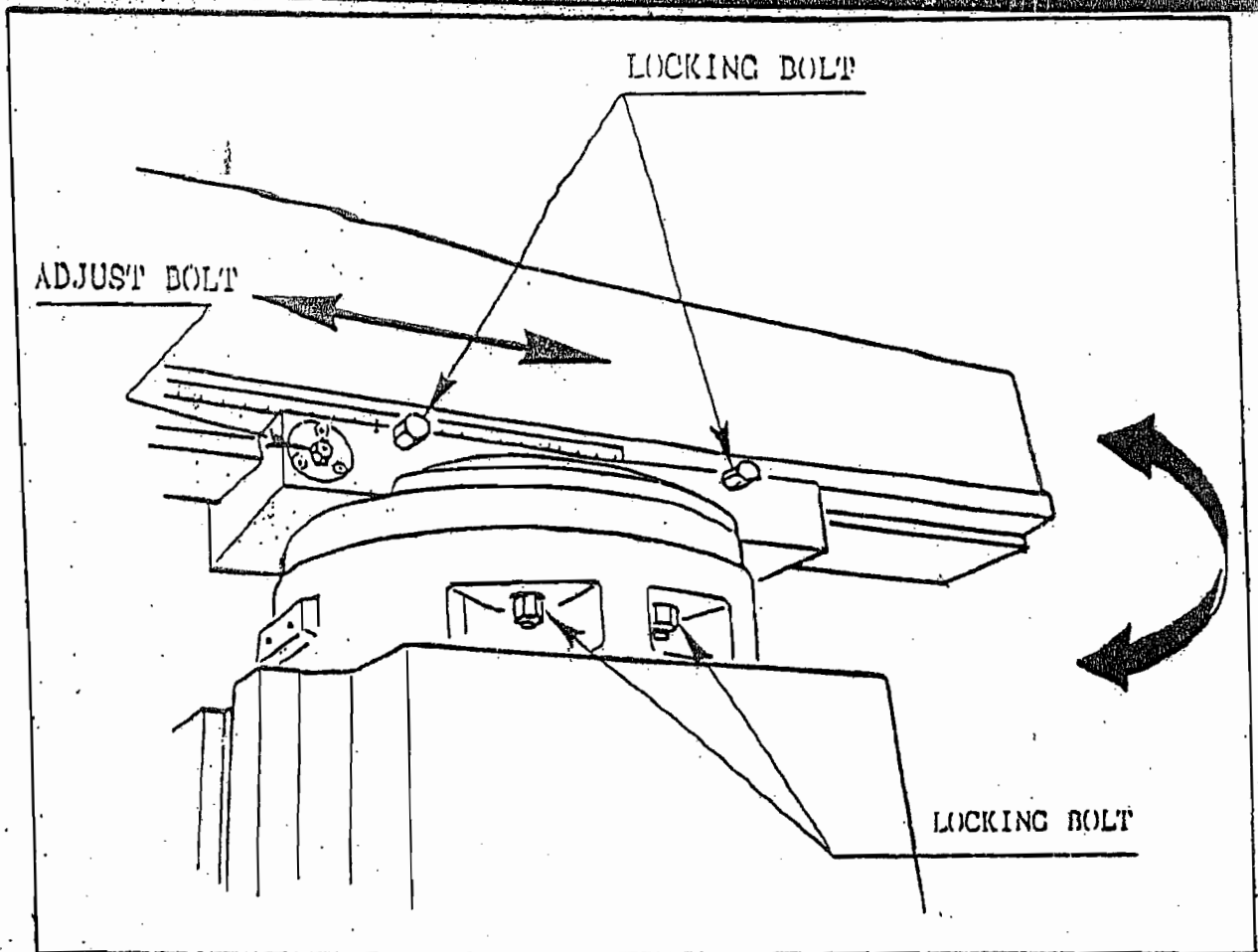
## B. AUTOMATIC FEEDING:

THE MAXIMUM LOADING 3/8" (9.5MM) DIA. DRILL IN STEEL

1. ENSURE QUILL LOCK IS OFF "D"
2. SET MICROMETER DIAL TO REQUIRED DEPTH "E"
3. ENGAGE AUTO. QUILL FEEDING AND ENSURE MOTOR IS STOPPED
4. SELECT FEEDING RATE "F"
5. SELECT FEEDING DIRECTION "C"
6. ENGAGE FEEDING TRIP LEVER "B"
7. NOW THE QUILL IS AUTOMATIC FEEDING

NOTE: DO NOT ENGAGE QUILL FEEDING "A" OVER 3000RPM.

# SWIVEL TURRET HEAD AND MOVE ARM SLIDE



## SWIVEL TURRET HEAD:

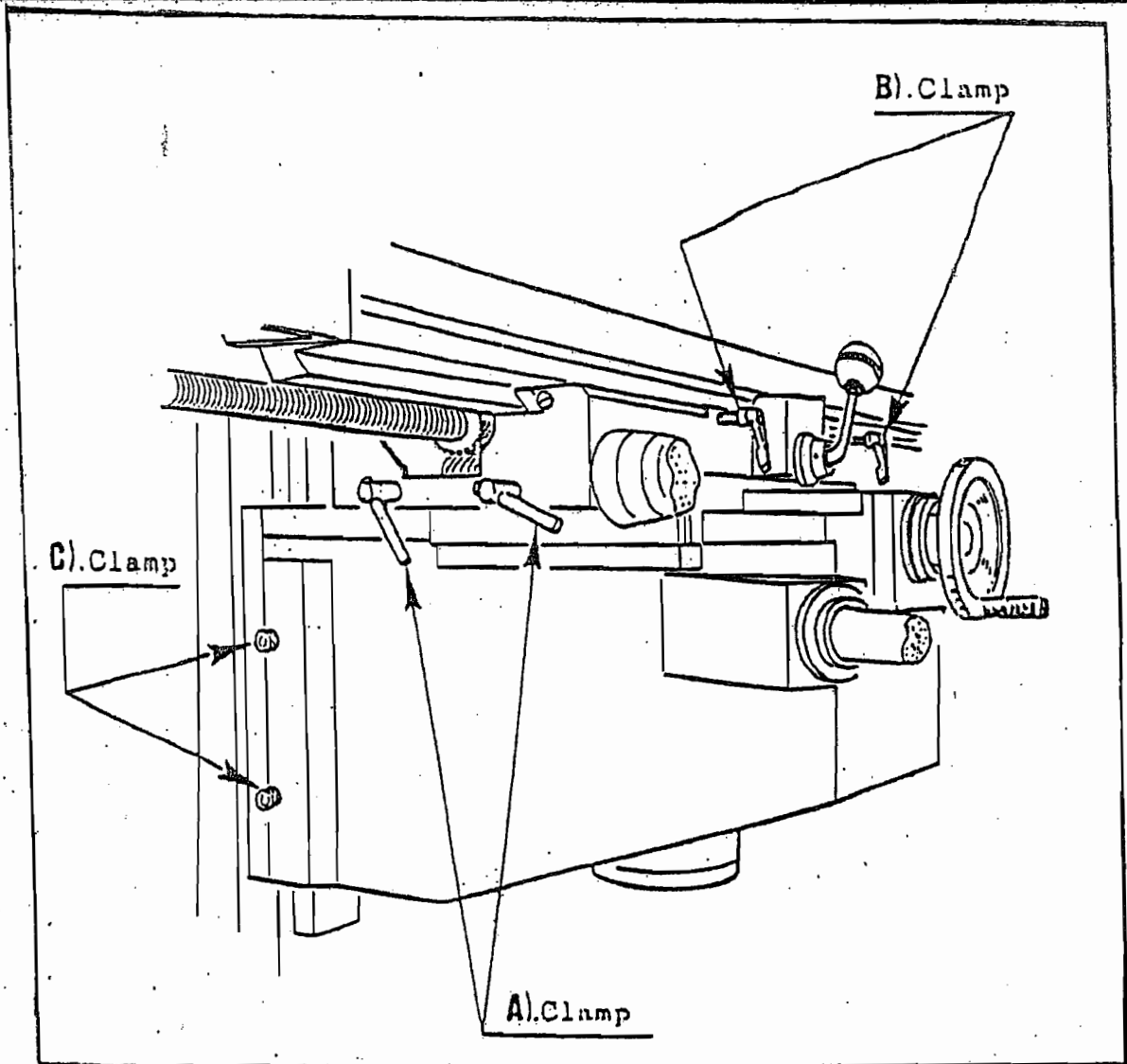
1. USE SPANNER TO UNLOCK THE FOUR (04) BOLTS
2. INDEX TO THE REQUIRED SETTING
3. LOCK THE FOUR (04) BOLTS

## MOVE ARM SLIDE:

1. USE SPANNER TO UNLOCK THE TWO (02) BOLTS
2. TURN THE ADJUSTMENT BOLTS TO MOVE THE SLIDE TO THE REQUIRED POSITION
3. LOCK AND TIGHTEN THE REAR BOLT FIRST



# CLAMPING



## A. CLAMPING THE SADDLE KNEE SLIDE:

1. MODERATE PRESSURE IS SUFFICIENT
2. EXCESS PRESSURE WILL CAUSE DISTORTION AND MAKE TABLE STIFF TO WIND

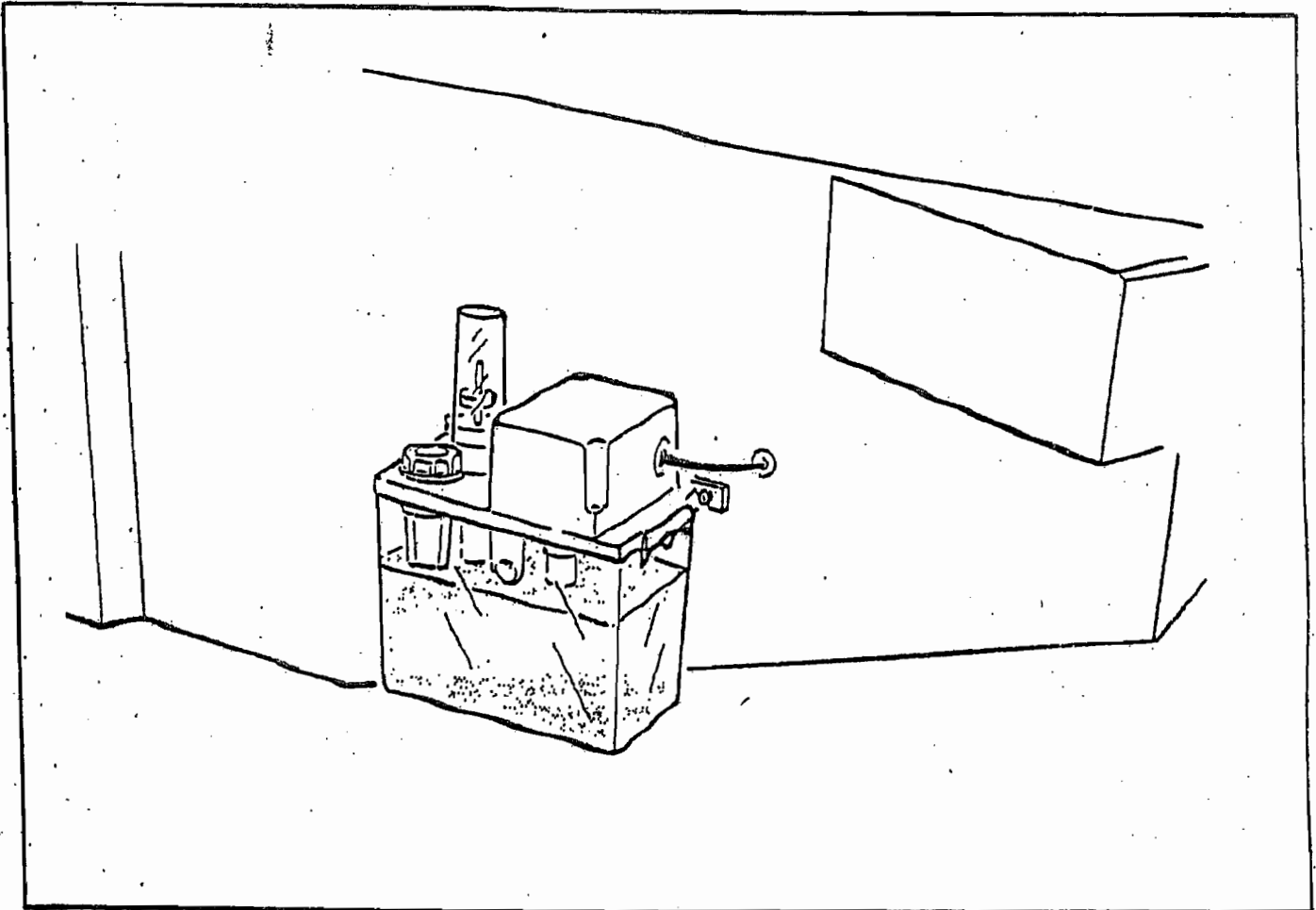
## B. CLAMPING THE TABLE SADDLE SLIDE:

1. MODERATE PRESSURE IS SUFFICIENT

## C. CLAMPING THE KNEE COLUMN SLIDE:

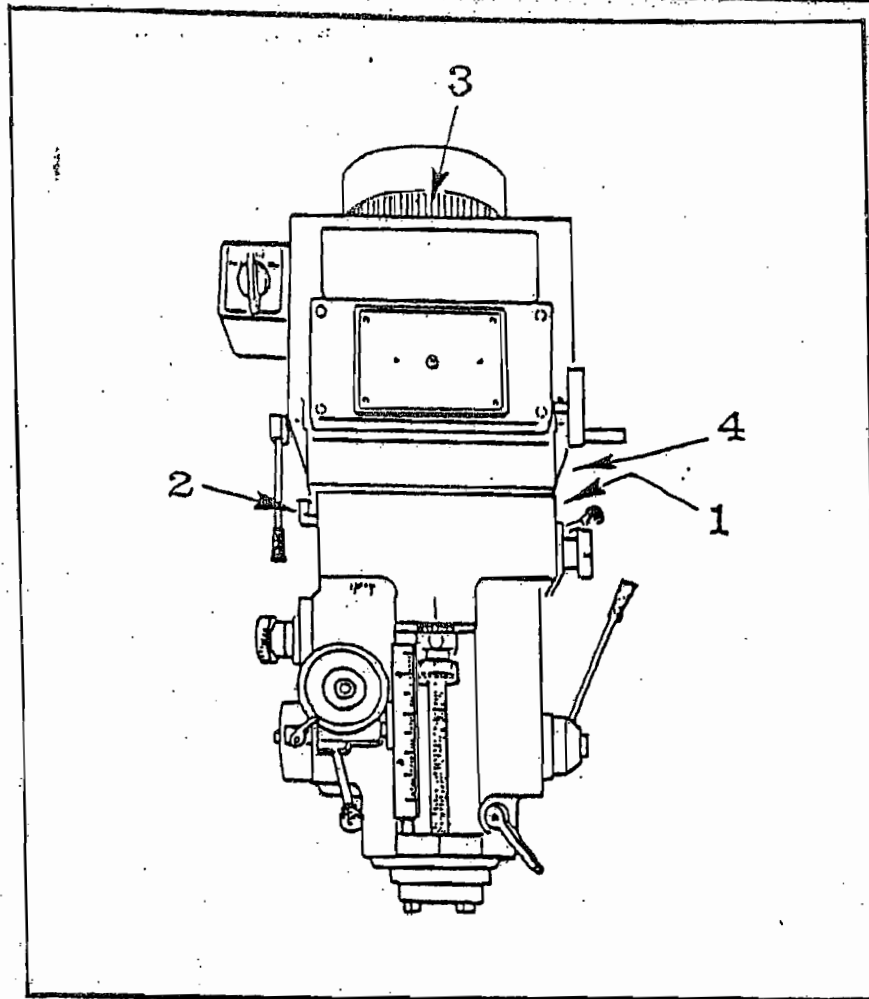
1. MODERATE PRESSURE IS SUFFICIENT

# LUBRICATION



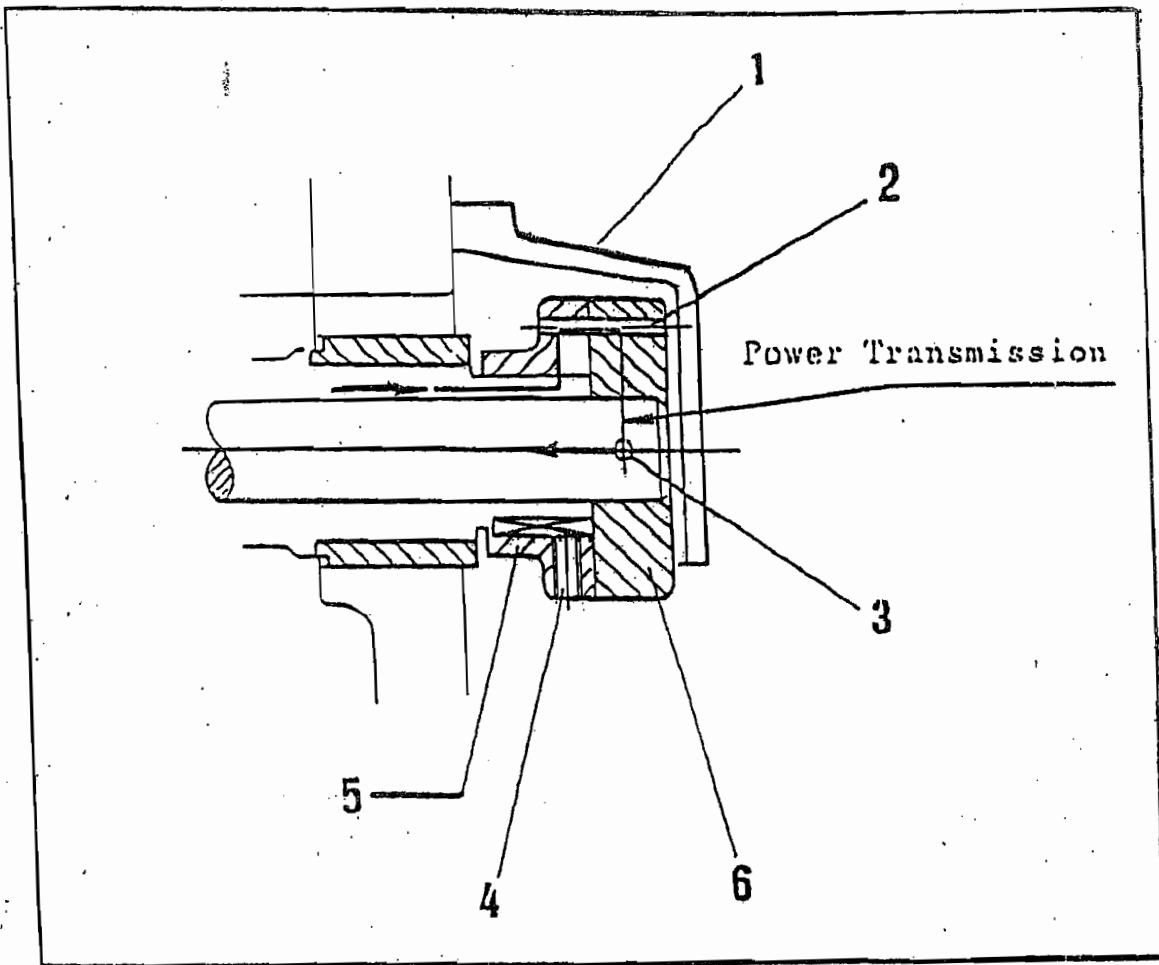
| LUBRICATE         | LUBRICANT  | FREQUENCY          | QUANTITY            |
|-------------------|--|--------------------|---------------------|
| LEAD SCREW        | SHELL CORNEA OIL 41<br>MOBIL X 2<br>SOCONY GARGOYLE VACTRA NO. 2 | CENTRALICED LUB.   | ONE PUMP            |
| SADDLE TABLE WAYS | "SUNOCE" WAY LUBE #80<br>MOBIL X 2                               | PUMP DAILY         | ONE PUMP            |
| SADDLE KNEE WAYS  | "SUNOCE" WAY LUBE #80<br>MOBIL X 2                               | CHECK LEVEL WEEKLY | ONE PUMP            |
| KNEE COLUMN WAYS  | "SUNOCE" WAY LUBE #80<br>MOBIL X 2                               |                    | ONE PUMP            |
| ELEVATING SCREW   | SHELL CORNEA OIL 41<br>MOBIL X 2<br>SOCONY GARGOYLE VACTRA NO. 2 | TWICE A WEEK       | FIVESHOTS (OIL GUN) |

# LUBRICATION



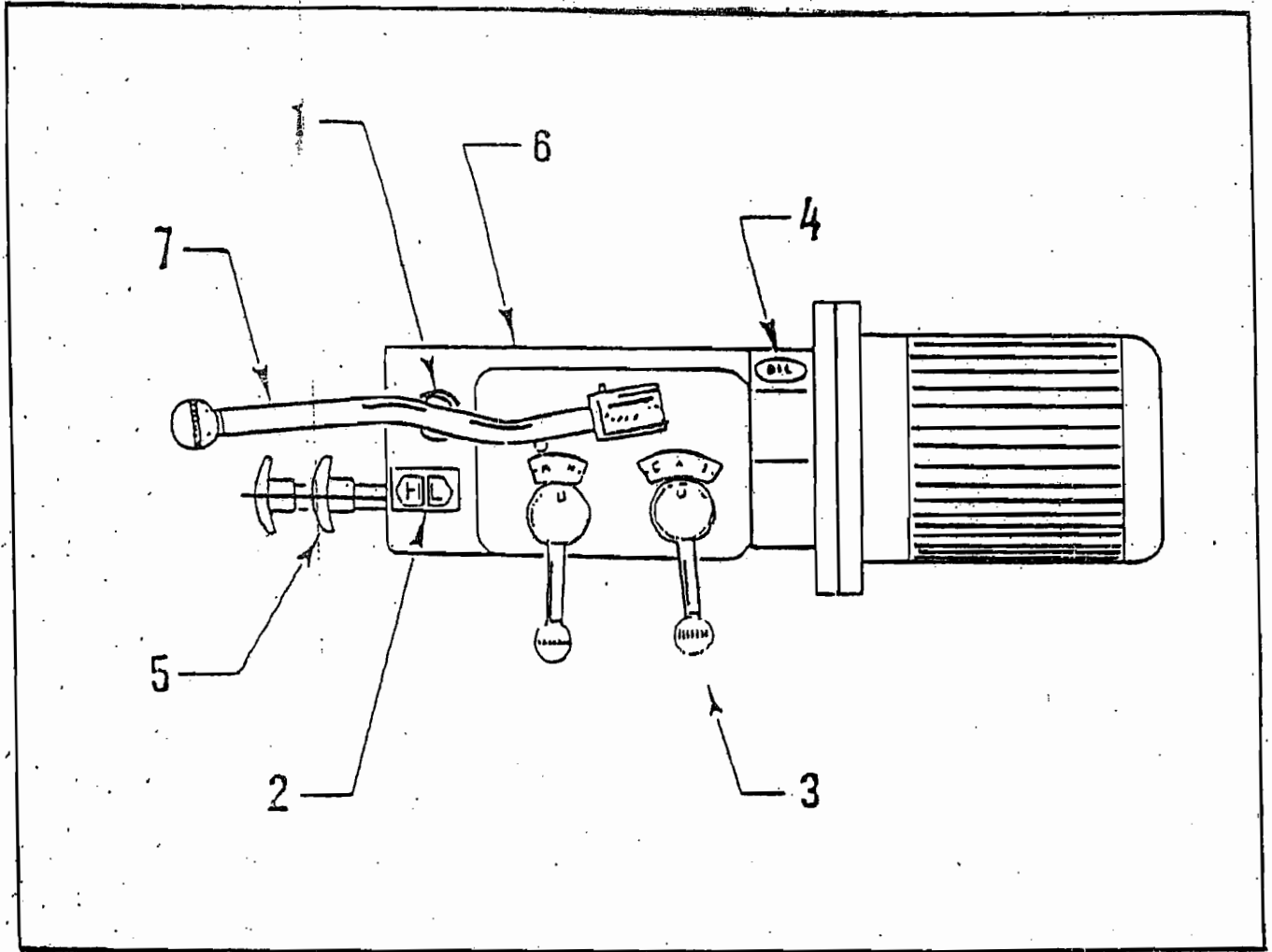
| ITEM | LUBRICATE                                  | LUBRICANT                                     | FREQUENCY                                   | QUANTITY                             |
|------|--|---|---|--------------------------------------|
| 01   | QUILL BEARINGS                             | VACTRA HEAVY MEDIUM<br>S.A.E. 10 OR 10W LIGHT | TWICE DAILY                                 | 5-10 DROPS                           |
| 02   | SPINDLE DOWN<br>FEED                       | VACTRA HEAVY MEDIUM<br>S.A.E. 10 OR 10W LIGHT | TWICE DAILY<br>(WHEN FEED IS<br>IN USE)     | TOP UP                               |
| 03   | DRAWBAR SPLINES<br>(MOVE QUILL<br>DOWN 2") | VACTRA HEAVY MEDIUM<br>S.A.E. 10 OR 10W LIGHT | WEEKLY                                      | 5 DROPS                              |
| 04   | BACK GEAR                                  | GREASE  | EVERY TWO (02)<br>MONTHS<br>(OF NORMAL USE) | EQUIVALENT<br>OF ONE(01)<br>TEASPOON |

# SAFETY PIN

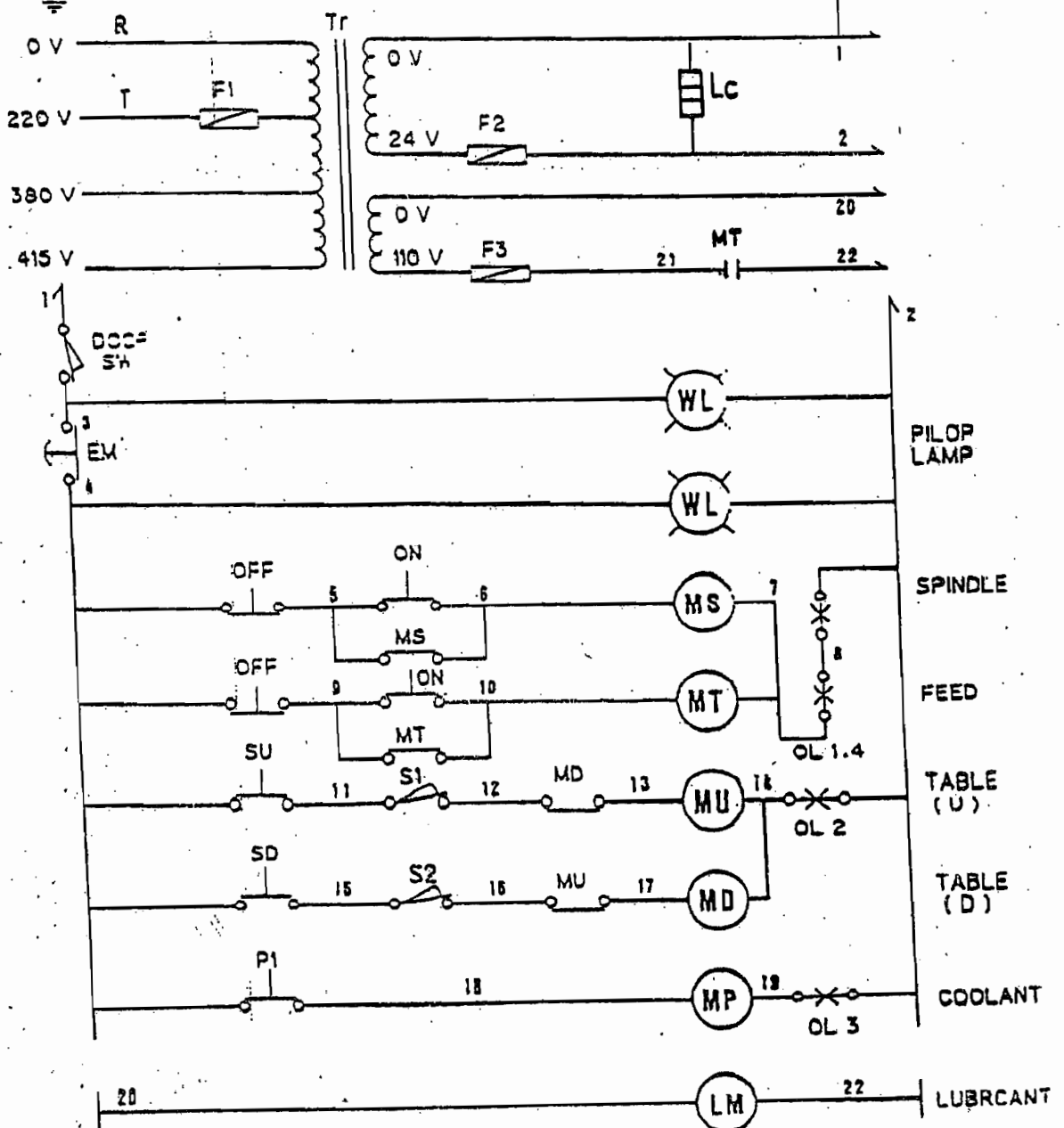
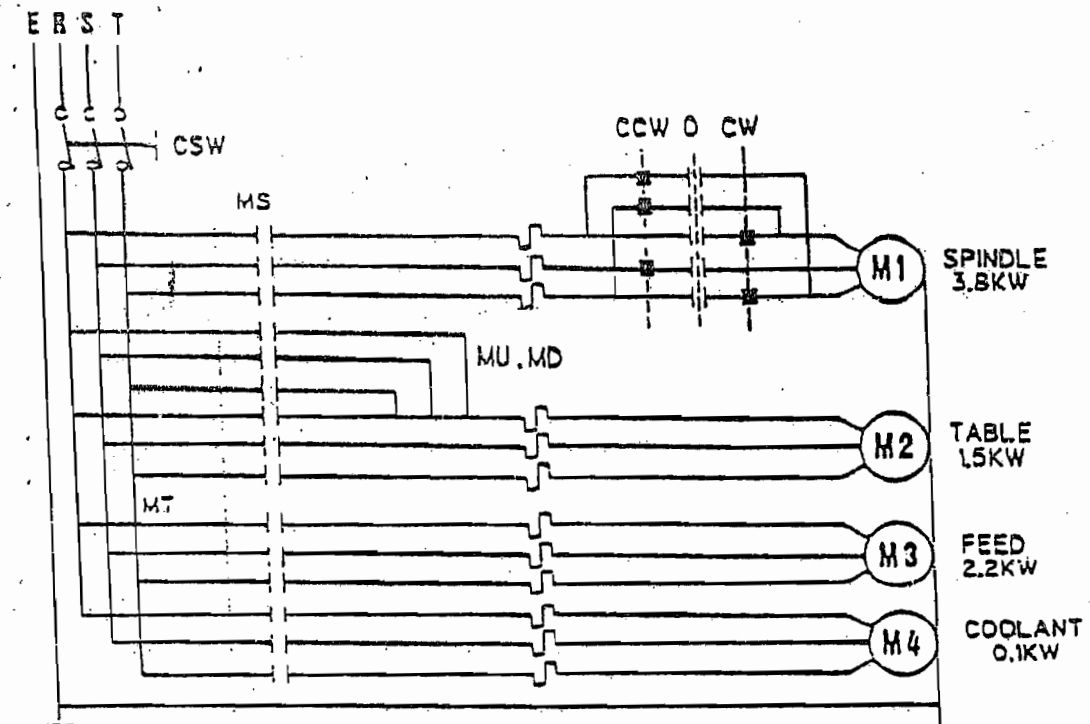


1. ALUMINUM COVER
2. TAPER SHEAR PIN
3. SPRING PIN
4. SET SCREW
5. COLLAR
6. COLLAR

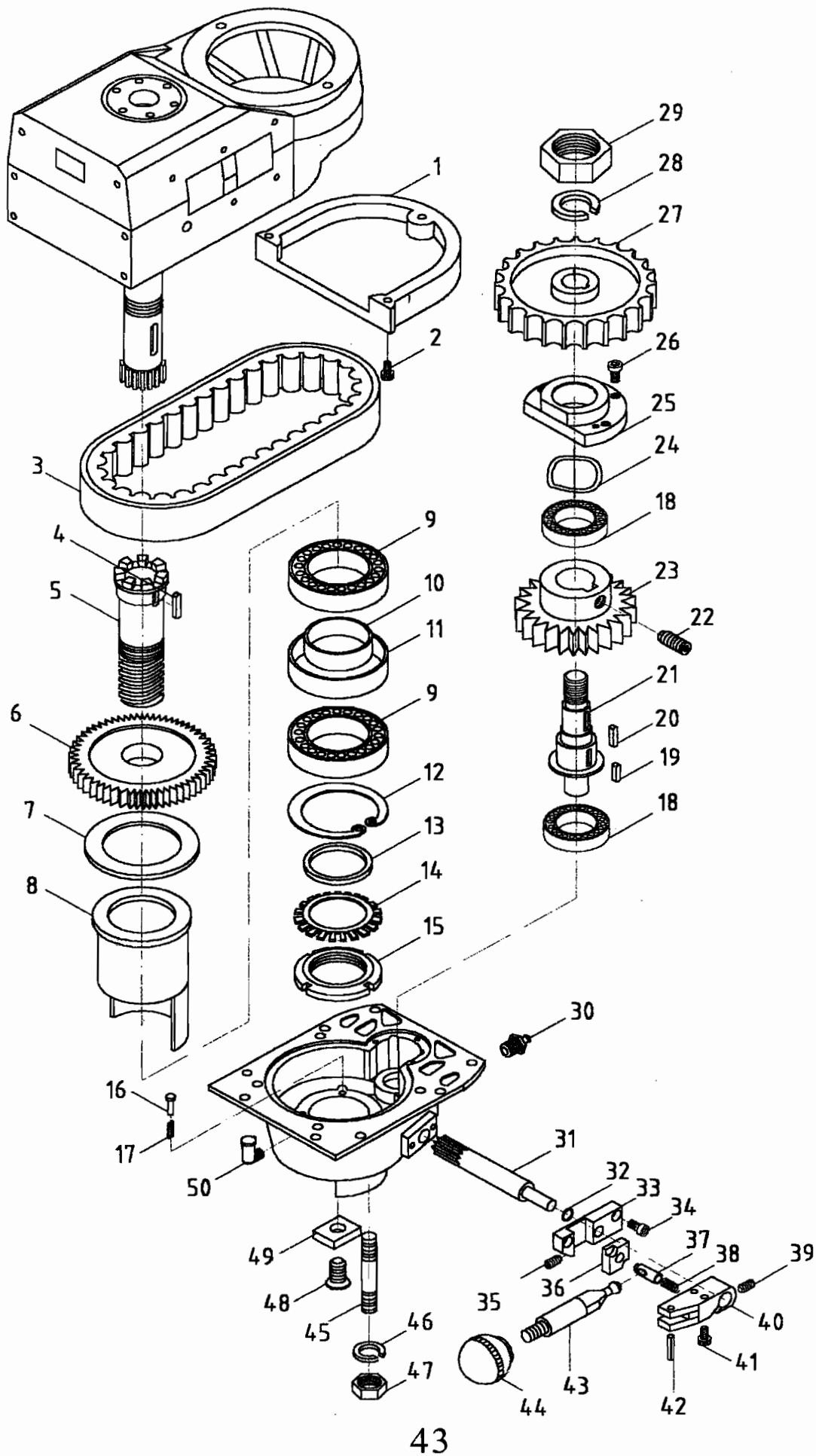
# SPEED CONTROL GEAR BOX



1. OIL LEVER
2. INDICATING PLATE
3. GEAR BOX HANDWHEEL
4. OIL FEELING HOLE
5. SPEED PUSH KNOB
6. GEAR BOX
7. FAST MOVE OPERATION BAR



# 5HP E-mill HEAD TOP HOUSING



## 5HP E-mill HEAD TOP HOUSING

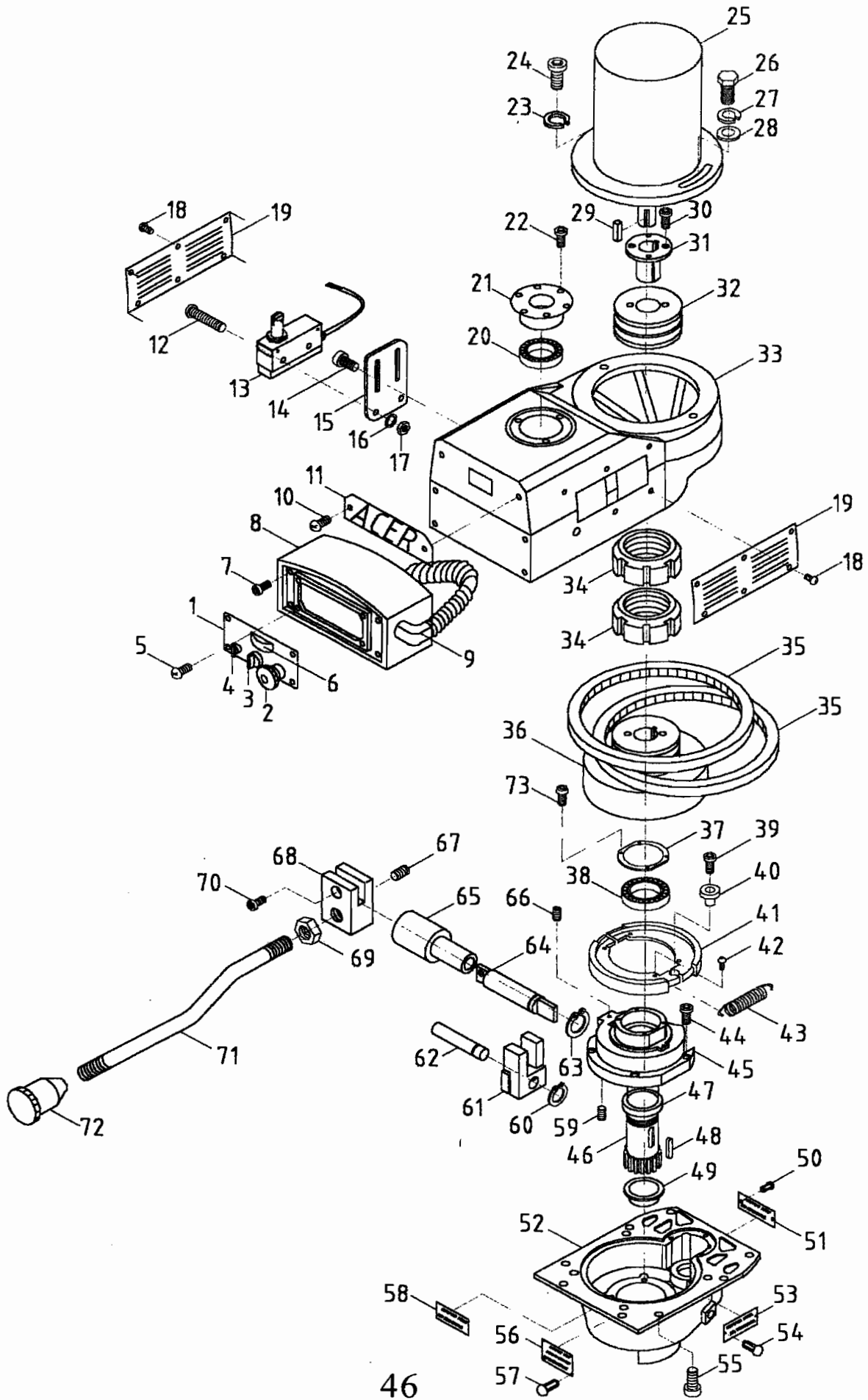
| ITEM NO. | PARTS NO. | FACTORY NO. | DESCRIPTION                       | Q'TY |
|----------|-----------|-------------|-----------------------------------|------|
| 1        | 8054      | VS11        | Motor Pulley Cover                | 1    |
| 2        | 8055      | VS12        | Socket HD Cap Screw               | 3    |
| 3        | 5E7036    | FVS63       | Timing Belt                       | 1    |
| 4        | 5E7081    | FVS72       | Key                               | 1    |
| 5        | 5E7039    | FVS73       | Splined Gear Hub                  | 1    |
| 6        | 5E7040    | FVS74       | Spindle Bull Gear                 | 1    |
| 7        | 5E7057-2  | FVS100      | Bull Gear Washer                  | 1    |
| 8        | 5E7048    | FVS75       | Ball Bearing Gear Sleeve          | 1    |
| 9        | 5E7041    | FVS77       | Bearing—6910VV                    | 2    |
| 10       | 5E7043    | FVS78       | Bull Gear Bearing Spacer          | 1    |
| 11       | 5E7057    | FVS79       | Bearing Sleeve Spacer             | 1    |
| 12       | 5E7042    | FVS80       | Snap Ring                         | 1    |
| 13       | 5E7039-1  | FVS         | Gear Hub Spacer                   | 1    |
| 14       | 5E7058    | FVS73-1     | Wave Spring Washer                | 1    |
| 15       | 5E7056    | FVS81       | Bearing Lock Nut                  | 1    |
| 16       | 7055-1    | VS102       | T-Tip Pin                         | 3    |
| 17       | 7055      | VS84        | Compression Spring                | 3    |
| 18       | 7079      | VS65        | Ball Bearing-6203ZZ               | 2    |
| 19       | 7078      | VS69        | Key                               | 1    |
| 20       | 7078      | VS69        | Key                               | 1    |
| 21       | 7080      | VS67        | Bull Gear Pinion Counter<br>Shaft | 1    |
| 22       | 7077      | VS03        | Socket Set Screw                  | 1    |
| 23       | 7083      | VS66        | Bull Gear Pinion                  | 1    |
| 24       | 7082      | VS64-1      | Wave Spring Washer                | 1    |
| 25       | 7084      | VS64        | Bull Gear Pinion Bearing<br>Cap   | 1    |
| 26       | 7085      | VS12        | Socket HD Cap Screw               | 3    |
| 27       | 5E7086    | FVS62       | Timing Belt Pulley                | 1    |
| 28       | 5E7087-1  | FVS         | Spring Washer                     | 1    |
| 29       | 7087      | VS61        | Jam Nut                           | 1    |
| 30       | 8063-3    | VS82-4      | Grease Nibble                     | 1    |
| 31       | 5E7059    | FVS87       | Bull Gear Shrift Pinion<br>Shaft  | 1    |
| 32       | 5E7059-1  | VS          | Wave Spring Washer                | 1    |
| 33       | 7060      | VS89        | Hi-Low Detent Plate               | 1    |
| 34       | 7068      | VS12        | Socket HD Cap Screw               | 2    |
| 35       | 7064      | VS          | Socket Set Screw                  | 1    |
| 36       | 7065      | VS89-1      | Adjustable Plate                  | 1    |



## 5HP E-mill HEAD TOP HOUSING

| ITEM NO. | PARTS NO. | FACTORY NO. | DESCRIPTION           | Q'TY |
|----------|-----------|-------------|-----------------------|------|
| 37       | 7066      | VS90        | Hi-Low Detent Plunger | 1    |
| 38       | 7067      | VS91        | Spring                | 1    |
| 39       | 5E7071-1  | VS          | Socket Set Screw      | 1    |
| 40       | 7071      | VS92        | Hi-Low Pinion Block   | 1    |
| 41       | 7072-1    | VS92-1      | Socket HD Cap Screw   | 2    |
| 42       | 7072      | VS88        | Spring Pin            | 1    |
| 43       | 7070      | VS94        | Hi-Low Shift Crank    | 1    |
| 44       | 7069      | B24         | Bakelite Ball         | 1    |
| 45       | 5E7063    | FVS85       | Stud                  | 3    |
| 46       | 5E7062    | FVS85-1     | Spring Washer         | 3    |
| 47       | 5E7061    | FVS85-2     | Hex Nut               | 3    |
| 48       | 5E7049-1  | FVS83-1     | Flat HD Cap Screw     | 2    |
| 49       | 5E7049-2  | FVS83-2     | Brass Locating Plate  | 2    |
| 50       | 7054      | VS82-1      | Oil Cup               | 1    |

# 5HP E-mill HEAD BACK GEAR



## 5HP E-mill HEAD BACK GEAR

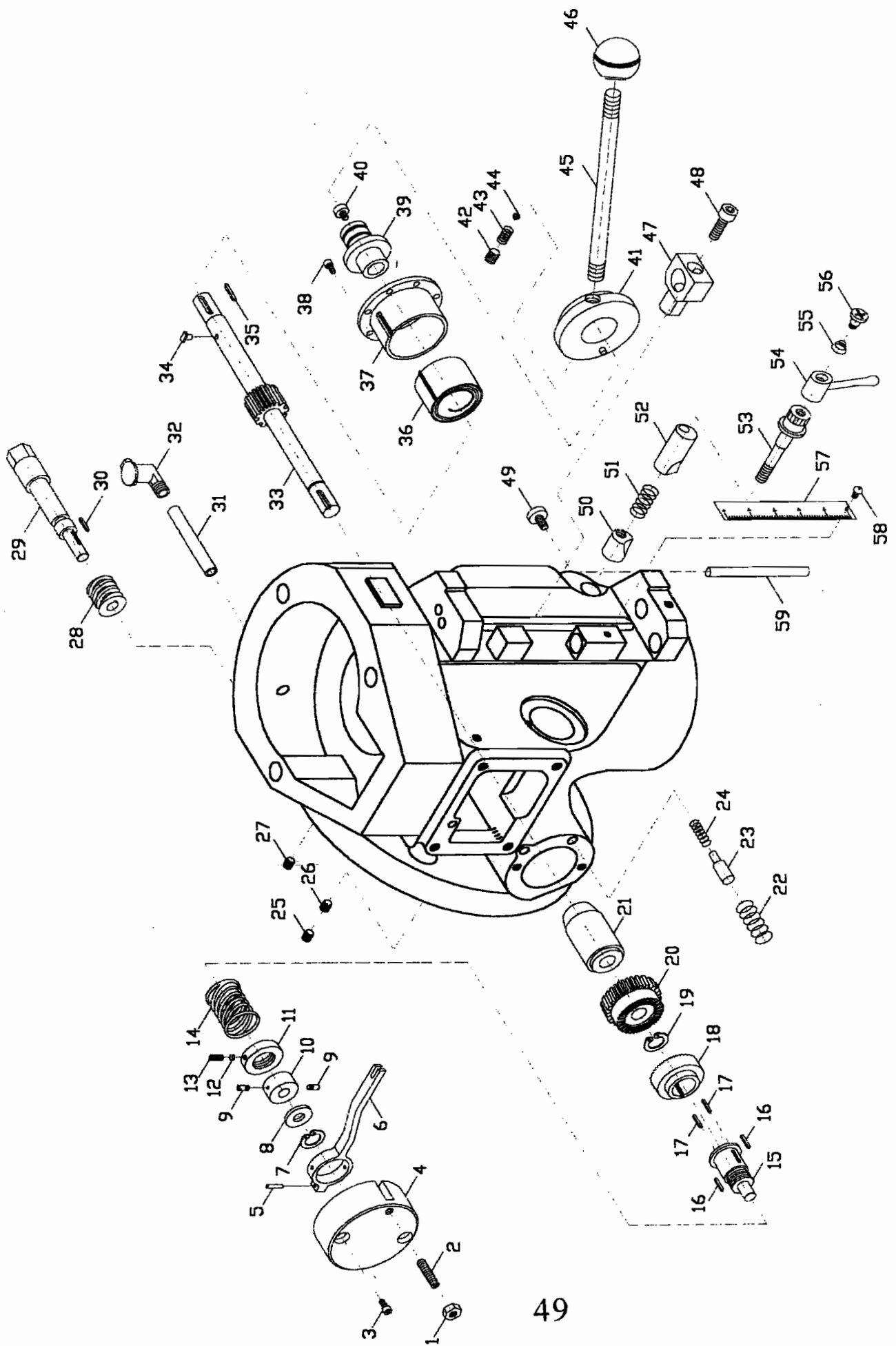
| ITEM NO. | PARTS NO. | FACTORY NO. | DESCRIPTION                | Q'TY |
|----------|-----------|-------------|----------------------------|------|
| 1        | 5EH7023-1 | FVS16-5     | Chrome Face Plate          | 1    |
| 2        | 9500      | VS          | Emergency Switch           | 1    |
| 3        | 9501      | VS          | F/R Switch                 | 1    |
| 4        | 9502      | VS          | Variable Resistor          | 1    |
| 5        | 7022-1    | VS17-1      | Round Socket Cap Screw     | 4    |
| 6        | 5E9503    | VS          | RPM Meter                  | 1    |
| 7        | H7025     | VS17        | Socket HD Cap Screw        | 4    |
| 8        | H7005-1   | VS16-6      | Speed Changer Housing      | 1    |
| 9        | 9504      | VS          | Control Wire Cable         | 1    |
| 10       | H8010-3   | VS1-6       | Round Socket Cap Screw     | 2    |
| 11       | H8010-1   | VS1-4       | ACER Name Plate            | 1    |
| 12       | 7022-2    | VS          | Round Socket Cap Screw     | 2    |
| 13       | 9505      | VS          | Limit Switch w/Cable       | 1    |
| 14       | 7022-5    | VS          | Socket HD Cap Screw        | 2    |
| 15       | H8010-2   | VS1-5       | Limit Switch Bracket Plate | 1    |
| 16       | 7022-3    | VS          | Spring Washer              | 2    |
| 17       | 7022-4    | VS          | Hex Nut                    | 2    |
| 18       | H7088-1   | VS101-1     | Round Cap Wooden Screw     | 12   |
| 19       | H7088     | VS101       | Ventilator                 | 2    |
| 20       | 5E8004    | FVS15       | Ball Bearing—6209ZZ        | 1    |
| 21       | 5E7013    | FVS13       | Top Bearing Cap            | 1    |
| 22       | 8001      | VS14        | Socket HD Cap Screw        | 3    |
| 23       | 8009-3    | VS          | Wave Lock Washer           | 1    |
| 24       | 8009      | VS          | Socket HD Cap Screw        | 1    |
| 25       | 5E8008-1  | VS          | 5 HP Spindle Motor         | 1    |
| 26       | 8009      | VS          | Socket HD Cap Screw        | 1    |
| 27       | 8009-3    | VS          | Wave Lock Washer           | 1    |
| 28       | 8009-2    | VS          | Washer                     | 1    |
| 29       | 8039-1    | VS06-1      | Key                        | 1    |
| 30       | 8040-3    | VS02-3      | Hex HD Screw               | 2    |
| 31       | 8040-2    | VS02-2      | V-Belt Pulley Sleeve       | 1    |
| 32       | 5E8040-1  | FVS02-1     | 3V Belt Pulley             | 1    |
| 33       | 5E8010    | FVS01       | Belt Housing               | 1    |
| 34       | 5E8034-1  | FVS70-2     | Spindle Hub Lock Nut       | 2    |
| 35       | 5E8027-1  | FVS04-1     | 3V Belt                    | 2    |
| 36       | 5E8028-1  | FVS45-1     | Stationary Driven Pulley   | 1    |
| 37       | 5EH8053-3 | FVS50-3     | Brake Shoe Lock Plate      | 1    |
| 38       | 5E8023    | FVS43       | Ball Bearing—6013VV        | 1    |
| 39       | 8035      | VS14        | Round Socket Cap Screw     | 1    |

## 5HP E-mill HEAD BACK GEAR

| ITEM NO. | PARTS NO. | FACTORY NO. | DESCRIPTION             | Q'TY |
|----------|-----------|-------------|-------------------------|------|
| 40       | 8036      | VS48        | Brake Shoe Pivot Sleeve | 1    |
| 41       | 5E8032    | FVS47       | Brake Shoe Assembly     | 1    |
| 42       | 8032-1    | VS47-1      | Round Cap Screw         | 4    |
| 43       | 8031      | VS49        | Brake Spring            | 2    |
| 44       | H8064     | VS51        | Socket HD Cap Screw     | 4    |
| 45       | 5EH8053-2 | FVS50-2     | Belt Housing Base       | 1    |
| 46       | 5E8034-5  | FVS70-1     | Spindle Pulley Hub      | 1    |
| 47       | 5E8033    | FVS98       | Spindle Pulley Spacer   | 1    |
| 48       | 5E8049-1  | FVS71-1     | Key                     | 1    |
| 49       | 5E7038    | FVS105      | Timing Pulley Clutch    |      |
|          |           |             | Sleeve                  | 1    |
| 50       | 8059      | VS          | Drive Screw             | 2    |
| 51       | 8063-2    | VS01-1      | Grease Add Name Plate   | 1    |
| 52       | 5EH8063   | FVS82       | Gear Housing            | 1    |
| 53       | 8058      | VS82-2      | Hi-Low Range Name Plate | 1    |
| 54       | 8059      | VS          | Drive Screw             | 2    |
| 55       | 8055      | VS12        | Socket HD Cap Screw     | 8    |
| 56       | 8061      | VS82-1      | Quill Feed Name Plate   | 1    |
| 57       | 8059      | VS          | Drive Screw             | 4    |
| 58       | H8063-1   | VS82-3      | Oil Add Name Plate      | 1    |
| 59       | H8077     | VS99        | Socket Set Screw        | 1    |
| 60       | 8066      | VS60        | Snap Ring               | 1    |
| 61       | 8067      | VS59        | Brake Operating Finger  | 2    |
| 62       | 8068      | VS58        | Brake Finger Pivot Stud | 1    |
| 63       | 8066-1    | VS60-1      | Snap Ring               | 1    |
| 64       | H8074     | VS53        | Brake Lock Shaft        | 1    |
| 65       | H8073     | VS52        | Sleeve for Brake Lock   |      |
|          |           |             | Shaft                   | 1    |
| 66       | H8077     | VS99        | Socket Set Screw        | 1    |
| 67       | 8072      | VS54-1      | Socket Set Screw        | 1    |
| 68       | 8070-2    | VS54        | Brake Handle Block      | 1    |
| 69       | 8070-1    | VS56-1      | Hex Nut                 | 1    |
| 70       | 8071-1    | VS55-1      | Socket HD Cap Screw     | 1    |
| 71       | 5E8070    | FVS56       | Brake Lock Handle       | 1    |
| 72       | 8069      | VS57        | Bakelite Ball Handle    | 1    |
| 73       | 5EH8053-4 |             | Round Socket Cap Screw  | 4    |

**Note:** To order parts for milling head, basic machine and table assembly, please search the main manual for the right part number.

# (MILLING HEAD) HAND FEED ASS'Y



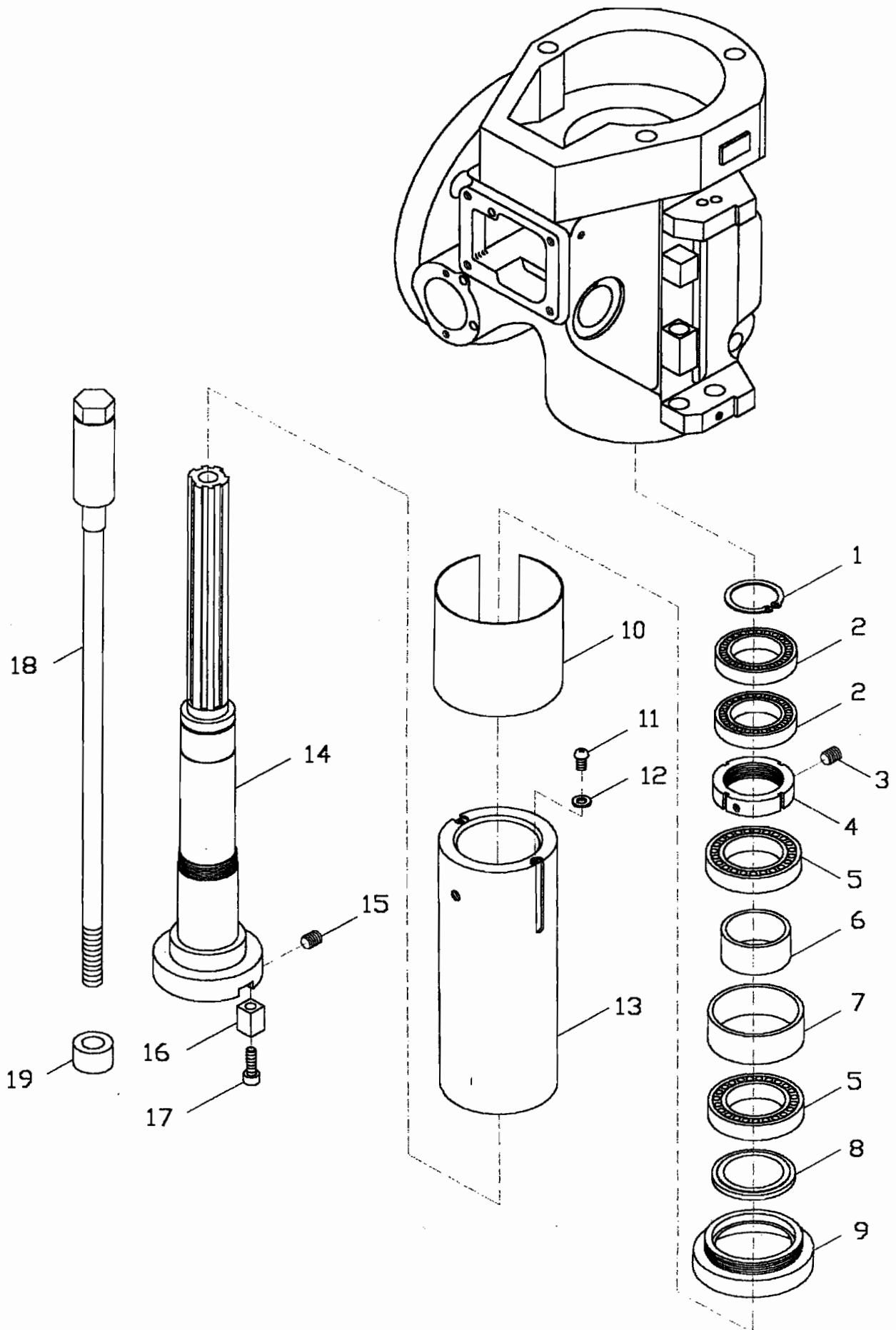
## 5HP (MILLING HEAD) HAND FEED ASS'Y

| ITEM NO. | PARTS NO.  | FACTORY NO. | DESCRIPTION                             | Q'TY |
|----------|------------|-------------|---|------|
| 1        | 5K-6208    | M6          | Hex Nut                                 | 1    |
| 2        | 5K-6207    | M6x16       | Socket Set Screw                        | 1    |
| 3        | 5K-6206    | M5x35       | Socket HD Cap Screw                     | 2    |
| 4        | 5K-6205    | B99         | Clutch Arm Cover                        | 1    |
| 5        | 5K-6204    | 5x20        | Roll Pin                                | 1    |
| 6        | 5K-6203    | FB96        | Overload Clutch Trip Lever              | 1    |
| 7        | 5K-6195-1  | C10         | Snap Ring                               | 1    |
| 8        | 5K-6201    | B97         | Overload Clutch Washer                  | 1    |
| 9        | 5K-6202    | B74         | Clutch Ring Pin                         | 2    |
| 10       | 5K-6200    | B75         | Clutch Ring                             | 1    |
| 11       | 5K-6198    | B78         | Overload Clutch Lock nut                | 1    |
| 12       | 5K-6199-1  |             | Brass Plug                              | 1    |
| 13       | 5K-6199    | M6x6        | Socket Set Screw                        | 1    |
| 14       | 5K-6197    | FB79        | Safety Clutch Spring                    | 1    |
| 15       | 5K-6195    | FB81        | Overload Clutch Sleeve                  | 1    |
| 16       | 5K-6196    | 5x20        | Key                                     | 2    |
| 17       | 5K-6196    | 5x25        | Key                                     | 2    |
| 18       | 5K-6194    | FB80        | Overload Clutch                         | 1    |
| 19       | 5K-6188-1  | C16         | Snap Ring                               | 1    |
| 20       | 5K-6187+88 | FB92+93     | Overload Clutch Worm Gear<br>and Ring   | 1    |
| 21       | 5K-6186    | FB90+91     | Quill Pinion Shaft Bushing              | 1    |
| 22       | 5K-6192    | B88-1       | Compression Spring                      | 1    |
| 23       | 5K-6193    | B89         | Overload Clutch Lever Spring<br>Plunger | 1    |
| 24       | 5K-6191    | FB88        | Compression Spring                      | 1    |
| 25       | 5K-6246-1  | M6x6        | Socket Set Screw                        | 1    |
| 26       | 5K-6246    | M6x16       | Lock Screw                              | 1    |
| 27       | 5K-5042    |             | Set Screw Plunger                       | 1    |
| 28       | 5K-5039    | B186        | Worm Gear                               | 1    |
| 29       | 5K-5040    | FB189       | ADJ Worm Shaft                          | 1    |

## **5HP (MILLING HEAD) HAND FEED ASS'Y**

| <b>ITEM NO.</b> | <b>PARTS NO.</b> | <b>FACTORY NO.</b> | <b>DESCRIPTION</b>       | <b>Q'TY</b> |
|-----------------|------------------|--------------------|--------------------------|-------------|
| 30              | 5K-5041          | 4x20               | Key                      | 1           |
| 31              | 5K-6133-1        |                    | Bronze Tubing            | 1           |
| 32              | 5K-6133          |                    | Oil Cup                  | 1           |
| 33              | 5K-6172          | FB166              | Quill Pinion Shaft       | 1           |
| 34              | 5K-6172-1        | B168               | Cap Tip- T shape         | 1           |
| 35              | 5K-6184          | 3x20               | Key                      | 1           |
| 36              | 5K-6181          | FB178              | Clock Spring             | 1           |
| 37              | 5K-6180          | FB177              | Spring Cover             | 1           |
| 38              | 5K-6180-1        | M5x12              | Socket HD Cap Screw      | 2           |
| 39              | 5K-6182          | B176               | Pinion Shaft Hub Sleeve  | 1           |
| 40              | 5K-6183          | B172               | Pinion Shaft Hub Screw   | 1           |
| 41              | 5K-6178          | B175               | Rack Feed Handle Hub     | 1           |
| 42              | 5K-6177          | M8x6               | Socket Set Screw         | 1           |
| 43              | 5K-6175          |                    | Compression Spring       | 1           |
| 44              | 5K-6176          |                    | Steel Ball               | 1           |
| 45              | 5K-6174          | B190               | Pinion Shaft Hub Handle  | 1           |
| 46              | 5K-6173          | B191               | Black Plastic Ball       | 1           |
| 47              | 5K-6105          | FB164              | Quill Stop Knob          | 1           |
| 48              | 5K-6106          | 3/8x5/8x24T        | Socket HD Cap Screw      | 1           |
| 49              | 5K-6253          | B154               | Cap Screw                | 1           |
| 50              | 5K-6116B         | B148               | Quill Lock Sleeve Tapped | 1           |
| 51              | 5K-6116-1        | B152-1             | Compression Spring       | 1           |
| 52              | 5K-6116A         | FB153              | Quill Lock Sleeve        | 1           |
| 53              | 5K-6117          | FB152              | Quill Lock Bolt          | 1           |
| 54              | 5K-6119          | FB149              | Lock Handle              | 1           |
| 55              | 5K-6117-1        |                    | Spring                   | 1           |
| 56              | 5K-6117-2        |                    | Spring Screw             | 1           |
| 57              | 5K-6243          | B159               | Micrometer Scale         | 1           |
| 58              | 5K-6244          | M4x8               | Round HD Cap Screw       | 2           |
| 59              | 5K-6251          | B147               | Set Bar                  | 1           |

# (MILLING HEAD) SPINDLE ASS'Y

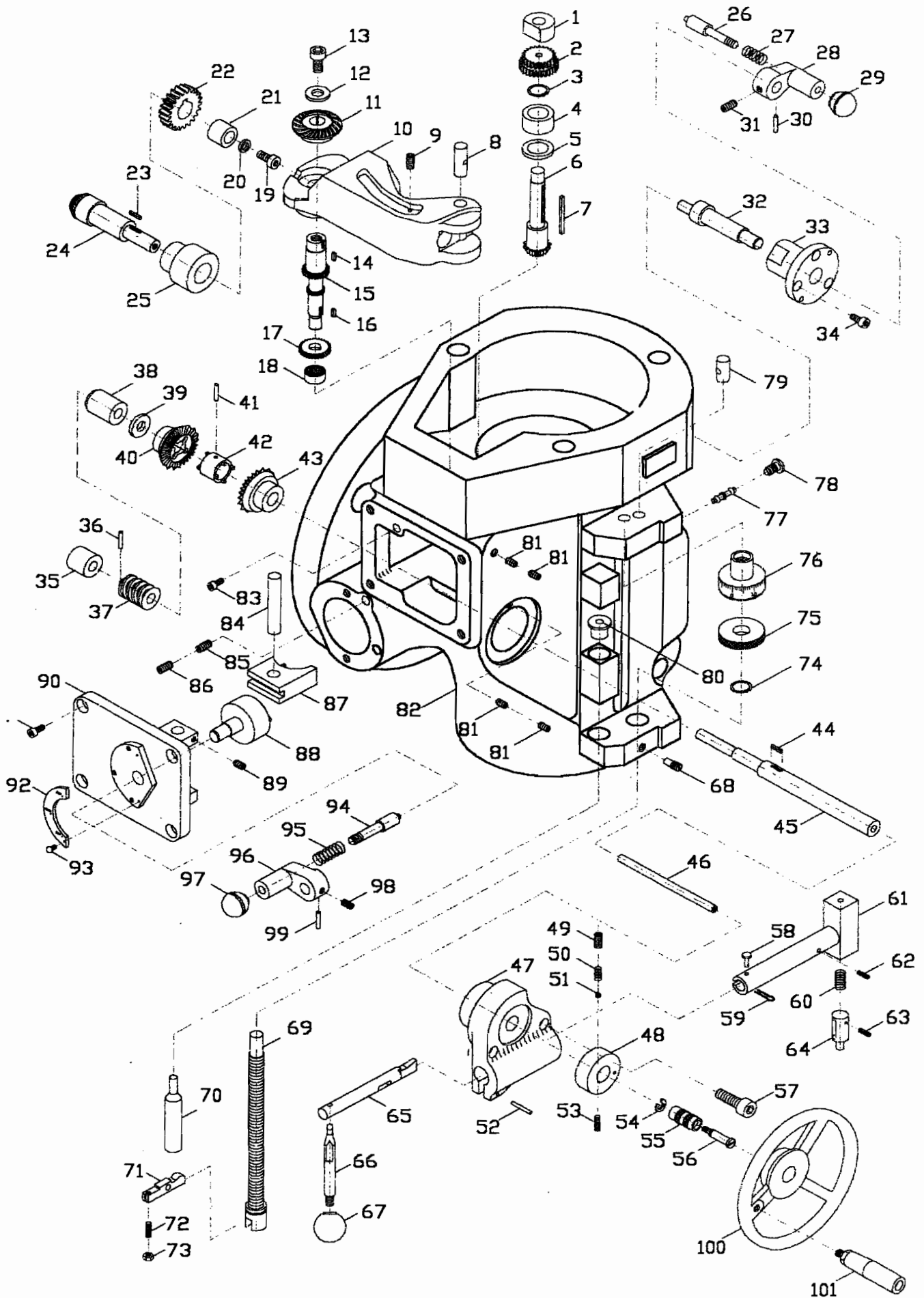




## 5HP (MILLING HEAD) SPINDLE ASS'Y

| ITEM NO. | PARTS NO. | FACTORY NO. | DESCRIPTION           | Q'TY |
|----------|-----------|-------------|-----------------------|------|
| 1        | 5K-6090   | C40         | Snap Ring             | 1    |
| 2        | 5K-6092   |             | Ball Bearing- 6008LLB | 2    |
| 3        | 5K-6094-1 | M8x6        | Socket Set Screw      | 2    |
| 4        | 5K-6094   | FB129       | Lock Nut              | 1    |
| 5        | 5K-6093   |             | Ball Bearing- 7010    | 2    |
| 6        | 5K-6096   | FB137       | Bearing Spacer- Small | 1    |
| 7        | 5K-6095   | FB136       | Bearing Spacer- Large | 1    |
| 8        | 5K-6097   | FB134       | Spindle Dirt Shield   | 1    |
| 9        | 5K-6098   | FB133       | Nose Piece            | 1    |
| 10       | 5K-6086   | FB128       | Quill Skirt           | 1    |
| 11       | 5K-6088-1 | M5x8        | Felt Washer Screw     | 2    |
| 12       | 5K-6088-2 | M5          | Washer                | 2    |
| 13       | 5K-6085   | FB142       | Quill                 | 1    |
| 14       | 5K-6084   | FB127       | Spindle #40           | 1    |
| 15       | 5K-6085-1 | M5x8        | Socket Set Screw      | 1    |
| 16       | 5K-6099   | FB127-1     | Keeper Key            | 2    |
| 17       | 5K-6100   | M8x25       | Socket HD Cap Screw   | 2    |
| 18       | 5K-8014   |             | Drawbar               | 1    |
| 19       | 5K-8020   |             | Drawbar Washer        | 1    |

# (MILLING HEAD) AUTO FEED ASS'Y



## 5HP (MILLING HEAD) AUTO FEED ASS'Y

| ITEM NO. | PARTS NO.  | FACTORY NO. | DESCRIPTION                      | Q'TY |
|----------|------------|-------------|----------------------------------|------|
| 1        | 5K-6157    | B27         | Cluster Gear Shaft Upper Bearing | 1    |
| 2        | 5K-6153    | FB28        | Cluster Gear Assembly            | 1    |
| 3        | 5K-6158    | C16         | Snap Ring                        | 1    |
| 4        | 5K-6156    | FB33        | Bevel Gear Bearing               | 1    |
| 5        | 5K-6159    | FB34        | Bevel Gear Thrust Spacer         | 1    |
| 6        | 5K-6151    | FB31+35     | Cluster Gear Shaft               | 1    |
| 7        | 5K-6160    | M3x35       | Cluster Gear Key                 | 1    |
| 8        | 5K-6122    | B16         | Feed Engage Pin                  | 1    |
| 9        | 5K-6123    | M6x6        | Socket Set Screw                 | 1    |
| 10       | 5K-6121    | FB17        | Worm Gear Cradle                 | 1    |
| 11       | 5K-6148    | FB15        | Feed Reverse Bevel Gear          | 1    |
| 12       | 5K-6149    | FB13, 3/8"  | Washer                           | 1    |
| 13       | 5K-6150    | 3/8x1/4     | Socket HD Cap Screw              | 1    |
| 14       | 5K-6147    | 3x8         | Key                              | 1    |
| 15       | 5K-6143    | FB36        | Feed Driving Gear Shaft          | 1    |
| 16       | 5K-6145    | 3x10        | Key                              | 1    |
| 17       | 5K-6144    | FB40        | Feed Drive Gear                  | 1    |
| 18       | 5K-6252    | BA66        | Needle Bearing                   | 1    |
| 19       | 5K-6124    | M6x12       | Socket HD Cap Screw              | 1    |
| 20       | 5K-6140    | M6          | Washer                           | 1    |
| 21       | 5K-6136-1  |             | Worm Gear Bushing                | 1    |
| 22       | 5K-6134    |             | Feed Drive Worm Gear             | 1    |
| 23       | 5K-6135    | 3x12        | Key                              | 1    |
| 24       | 5K-6139    |             | Feed Bevel Pinion                | 1    |
| 25       | 5K-6136+37 |             | Worm Gear Cradle Bushing         | 1    |
| 26       | 5K-6169    | B20         | Gear Shift Plunger               | 1    |
| 27       | 5K-6170    | B21         | Compression Spring               | 1    |
| 28       | 5K-6168    | B23         | Shift Crank                      | 1    |
| 29       | 5K-6131    | B24         | Black Plastic Ball               | 1    |
| 30       | 5K-6128    | 3x20        | Spring Pin                       | 1    |

## 5HP (MILLING HEAD) AUTO FEED ASS'Y

| ITEM NO. | PARTS NO. | FACTORY NO. | DESCRIPTION                   | Q'TY |
|----------|-----------|-------------|-------------------------------|------|
| 31       | 5K-6168-1 | M5x5        | Socket Set Screw              | 1    |
| 32       | 5K-6126   | B18         | Worm Gear Cradle Throw-out    | 1    |
| 33       | 5K-6125   | B19         | Shift Sleeve                  | 1    |
| 34       | 5K-6132   | M5x12       | Socket HD Cap Screw           | 3    |
| 35       | 5K-6227   | B42         | Bushing                       | 1    |
| 36       | 5K-6226   | 3x10        | Spring Pin                    | 1    |
| 37       | 5K-6225   | B43         | Worm                          | 1    |
| 38       | 5K-6224   | FB44        | Feed Worm Shaft Bushing       | 1    |
| 39       | 5K-6223   | B47         | Feed Worm Shaft Thrust Washer | 1    |
| 40       | 5K-6220   | B48+49      | Feed Reverse Bevel Gear       | 1    |
| 41       | 5K-6217   | 3x20        | Spring Pin                    | 1    |
| 42       | 5K-6222   | B50         | Feed Reverse Clutch           | 1    |
| 43       | 5K-6220   | B48+49      | Feed Reverse Bevel Gear       | 1    |
| 44       | 5K-6230   | 3x15        | Key                           | 1    |
| 45       | 5K-6209   | FB57        | Feed Worm Shaft               | 1    |
| 46       | 5K-6216   | FB55        | Reverse Clutch Rod            | 1    |
| 47       | 5K-6231   | FB106       | Feed Trip Bracket             | 1    |
| 48       | 5K-6218   | B113        | Handwheel Clutch              | 1    |
| 49       | 5K-6219-1 | M8x6        | Socket Set Screw              | 1    |
| 50       | 5K-6219-2 | B115        | Compression Spring            | 1    |
| 51       | 5K-6255   | B114        | Steel Ball                    | 1    |
| 52       | 5K-6231-1 | 5x20        | Dowel Pin                     | 1    |
| 53       | 5K-6219   | M6x6        | Socket Set Screw              | 1    |
| 54       | 5K-6215   | B112, E5    | Snap Ring                     | 1    |
| 55       | 5K-6213   | B111        | Reverse Knob                  | 1    |
| 56       | 5K-6214   | B110        | Feed Reverse Knob Stud        | 1    |
| 57       | 5K-6232   | M6x25       | Socket HD Cap Screw           | 2    |
| 58       | 5K-6236-1 |             | Dowel Pin                     | 1    |
| 59       | 5K-6241-1 | #2          | Y Pin                         | 1    |
| 60       | 5K-6242   | B120        | Compression Spring            | 1    |

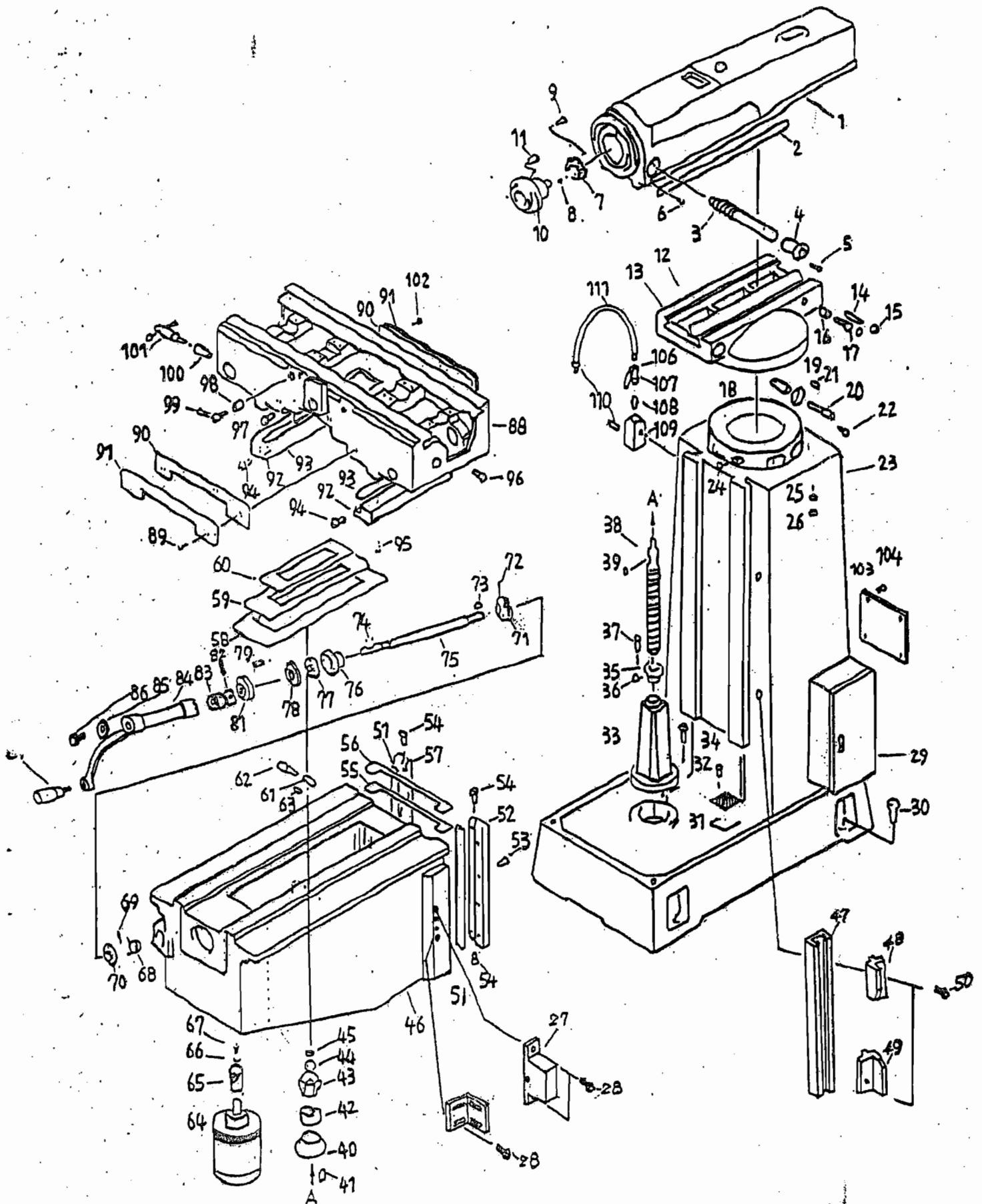
## 5HP (MILLING HEAD) AUTO FEED ASS'Y

| ITEM NO. | PARTS NO. | FACTORY NO. | DESCRIPTION                   | Q'TY |
|----------|-----------|-------------|-------------------------------|------|
| 61       | 5K-6236   | FB118       | Cam Rod Sleeve Assembly       | 1    |
| 62       | 5K-6237   | 3x16        | Spring Pin                    | 1    |
| 63       | 5K-6241   | 3x12        | Spring Pin                    | 1    |
| 64       | 5K-6240   | B121        | Trip Plunger                  | 1    |
| 65       | 5K-6239   | FB103       | Cam Rod                       | 1    |
| 66       | 5K-6234   | FB104       | Trip Handle                   | 1    |
| 67       | 5K-6131   | B24         | Black Plastic Ball            | 1    |
| 68       | 5K-6112   |             | Trip Lever Pin                | 1    |
| 69       | 5K-6104   | B164        | Quill Stop Micro-Screw        | 1    |
| 70       | 5K-6118   | B124        | Feed Trip Plunger             | 1    |
| 71       | 5K-6111   | B145        | Feed Trip Lever               | 1    |
| 72       | 5K-6113   | B146, M4x20 | Socket Set Screw              | 1    |
| 73       | 5K-6113-1 | M4          | Hex Nut                       | 1    |
| 74       | 5K-6115   | C16         | Snap Ring                     | 1    |
| 75       | 5K-6108   | B161        | Quill Micro-Stop Nut          | 1    |
| 76       | 5K-6107   | B162        | Micrometer Nut                | 1    |
| 77       | 5K-6110   | B183        | Reverse Trip Ball Lever       | 1    |
| 78       | 5K-6114   | B185        | Reverse Trip Ball Lever Screw | 1    |
| 79       | 5K-6109   | B184        | Feed Reverse Trip Plunger     | 1    |
| 80       | 5K-6118-1 | B123        | Trip Plunger Bushing          | 1    |
| 81       | 5K-6246   | M6x8        | Socket Set Screw              | 4    |
| 82       | 5K-6101   | FB192       | Quill Housing                 | 1    |
| 83       | 5K-6101-1 | M6x30       | Socket HD Cap Screw           | 1    |
| 84       | 5K-6163   | B60         | Feed Shift Rod                | 1    |
| 85       | 5K-6228   | M6x12       | Mock-It Lock Screw            | 1    |
| 86       | 5K-6228-1 | M6x8        | Socket Set Screw              | 1    |
| 87       | 5K-6162   | B63         | Feed Gear Shift Fork          | 1    |
| 88       | 5K-6166   | FB64        | Cluster Gear Shift Crank      | 1    |
| 89       | 5K-6164   | M5x5        | Socket Set Screw              | 1    |
| 90       | 5K-6161   | FB66        | Cluster Gear Cover            | 1    |
| 91       | 5K-6165   | M5x12       | Socket HD Cap Screw           | 4    |

## 5HP (MILLING HEAD) AUTO FEED ASS'Y

| ITEM NO. | PARTS NO. | FACTORY NO. | DESCRIPTION        | Q'TY |
|----------|-----------|-------------|--------------------|------|
| 92       | 5K-6165-1 | VS66-1      | Feed Rate Plate    | 1    |
| 93       | 5K-6165-2 |             | Drive Screw        | 2    |
| 94       | 5K-6169   | B20         | Gear Shift Plunger | 1    |
| 95       | 5K-6170   | B21         | Compression Spring | 1    |
| 96       | 5K-6168   | B23         | Shift Crank        | 1    |
| 97       | 5K-6171   | B24         | Black Plastic Ball | 1    |
| 98       | 5K-6168-1 | M5x5        | Socket Set Screw   | 1    |
| 99       | 5K-6167   | 3x20        | Spring Pin         | 1    |
| 100      | 5K-6210   | B125        | Handwheel          | 1    |
| 101      | 5K-6210-1 | B126        | Handle             | 1    |

# BASIC MACHINE



# PARTS LIST - BASIC MACHINE

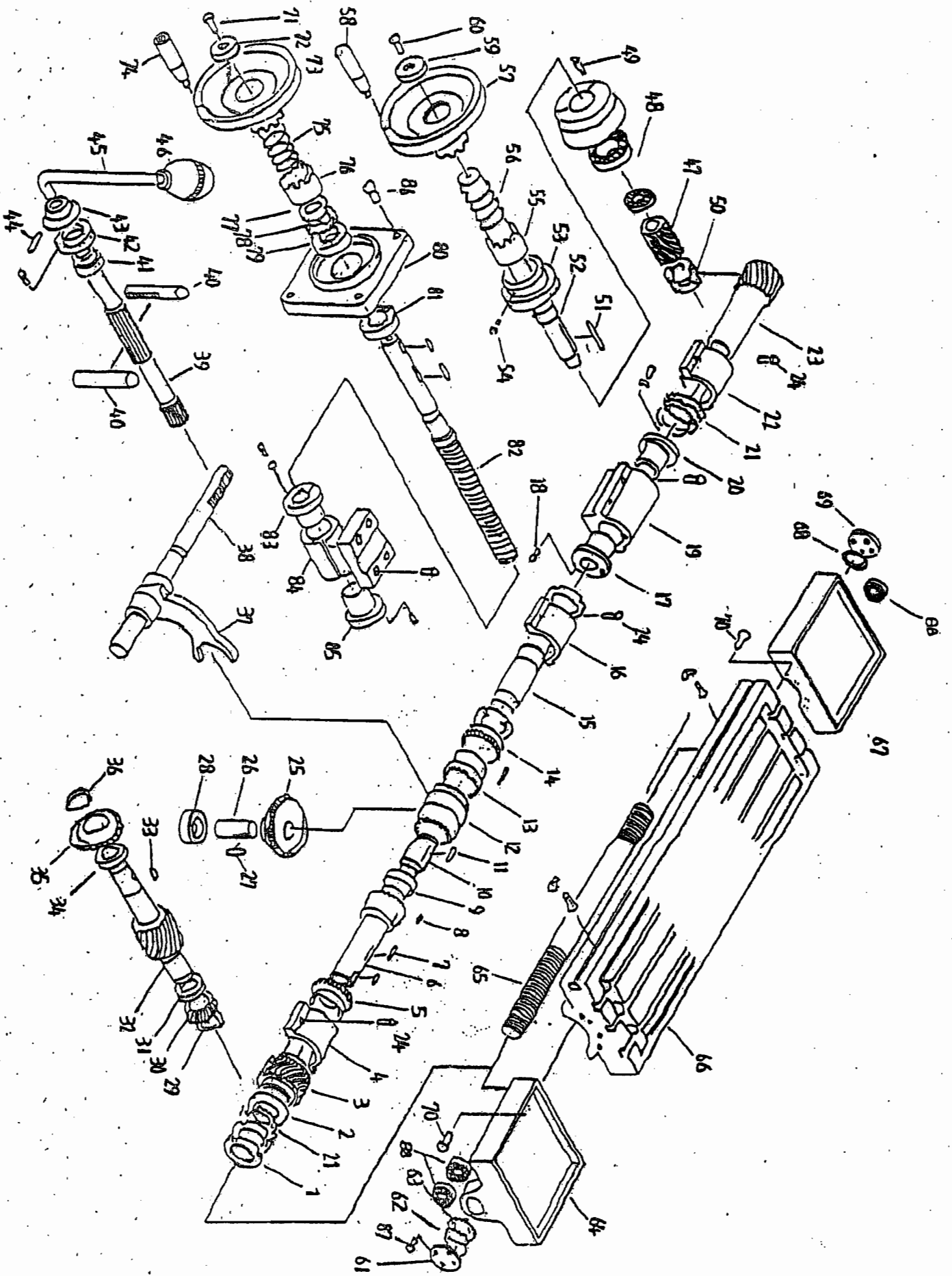
| ITEM NO. | COMP NO. | DESCRIPTION                  | QTY |
|----------|----------|------------------------------|-----|
| 1        | HD-004   | RAM                          | 1   |
| 2        |          | MICROMETER                   | 1   |
| 3        |          | WORM SHAFT                   | 1   |
| 4        |          | BUSHING                      | 1   |
| 5        |          | SCREW                        | 1   |
| 6        |          | CAP SCREW                    | 3   |
| 7        | HD-001   | QUILL HOUSING ADJUSTING GEAR | 2   |
| 8        |          | KEY                          | 1   |
| 9        |          | SCREW                        | 1   |
| 10       |          | GEAR RETAINER                | 4   |
| 11       |          | CAP SCREW                    | 1   |
| 12       | HD-036   | GIB                          | 4   |
| 13       | HD 013   | TURRET                       | 1   |
| 14       |          | GIB LOCK SCREW               | 1   |
| 15       |          | GIB LOCK SCREW NUT           | 2   |
| 16       |          | BUSHING                      | 2   |
| 17       |          | RAM LOCK SCREW               | 2   |
| 18       |          | ROM PINION GEAR              | 2   |
| 19       |          | GEAR CAP                     | 1   |
| 20       |          | GEAR SHAFT                   | 1   |
| 21       |          | KEY                          | 1   |
| 22       |          | CAP SCREW                    | 1   |
| 23       | HC-024   | COLUMN                       | 3   |
| 24       |          | SCREW                        | 1   |
| 25       |          | WASHER                       | 2   |
| 26       |          | NUT                          | 4   |
| 27       |          | PLATE                        | 4   |
| 28       |          | SCREW                        | 1   |
| 29       |          | ELECTRICAL BOX               | 2   |
| 30       |          | CAP SCREW                    | 1   |
| 31       | HD-031   | STRAINER                     | 4   |
| 32       |          | SCREW                        | 2   |
| 33       | HE-029   | ELEVATING SCREW HOUSING      | 4   |
| 34       |          | CAP SCREW                    | 1   |
| 35       | HE-028A  | ELEVATING SCREW NUT          | 2   |
| 36       |          | SCREW NIPPLE                 | 1   |
| 37       |          | CAP SCREW                    | 1   |
| 38       | HC-014   | SADDLE LOCK BOLT             | 3   |
| 39       |          | KEY                          | 1   |
| 40       | HE-026   | BEARING RETAINER RING        | 1   |
| 41       |          | CAP SCREW                    | 1   |
| 42       |          | BEARING                      | 3   |
| 43       | HE-024   | BEVEL GEAR                   | 1   |
| 44       | HC-011   | WASHER                       | 1   |
| 45       |          | NUT                          | 1   |
| 46       | HE-006   | KNEE                         | 1   |
| 47       |          | STOP PIECE PLATE             | 1   |
| 48       |          | STOP PIECE                   | 1   |
| 49       |          | STOP PIECE                   | 1   |
| 50       |          | CAP SCREW                    | 1   |
| 51       |          | GIB                          | 2   |
| 52       |          | GIB BRACKET                  | 2   |
| 53       |          | CAP SCREW                    | 1   |
| 54       |          | GIB SCREW                    | 8   |
| 55       | HC-021   | BELT WIPERS                  | 4   |



# PARTS LIST - BASIC MACHINE

| ITEM NO. | COMP NO. | DESCRIPTION                | QTY |
|----------|----------|----------------------------|-----|
| 56       |          | SADDLE KNEE WIPER PLATE    | 1   |
| 57       |          | GIB BRACKET                | 1   |
| 58       |          | CHIP GUARDS                | 1   |
| 59       |          | CHIP GUARDS                | 1   |
| 60       |          | CHIP GUARDS                | 1   |
| 61       | HC-015   | SADDLE LOCK PLUNGER        | 1   |
| 62       |          | SADDLE LOCK BOLT           | 2   |
| 63       |          | SCREW                      | 2   |
| 64       |          | MOTOR                      | 2   |
| 65       |          | WORM                       | 1   |
| 66       |          | BUSHING                    | 1   |
| 67       |          | CAP SCREW                  | 1   |
| 68       | HE-015   | BEVEL PINION               | 1   |
| 69       |          | SET SCREW                  | 1   |
| 70       |          | BEARING                    | 1   |
| 71       |          | WORM GEAR                  | 1   |
| 72       |          | SET SCREW                  | 1   |
| 73       |          | KEY                        | 1   |
| 74       |          | KEY                        | 1   |
| 75       | HE-017   | ELEVATING SHAFT            | 1   |
| 76       | HE-016   | BEARING CAP                | 1   |
| 77       |          | BEARING                    | 1   |
| 78       | HC-015   | BEARING RETAINER RING      | 1   |
| 79       |          | CAP SCREW                  | 1   |
| 80       | HE-018   | DIAL HOLDER                | 3   |
| 81       | HE-019   | DIAL (100, 125) GRADUATION | 1   |
| 82       |          | SET SCREW                  | 1   |
| 83       | HE-020   | GEAR SHAFT CLUTCH INSERT   | 1   |
| 84       | HE-021   | ELEVATING CRANK            | 1   |
| 85       |          | WASHER                     | 1   |
| 86       |          | CAP SCREW                  | 1   |
| 87       | HC-053   | HANDLE                     | 1   |
| 88       | HC-017   | SADDLE                     | 1   |
| 90       |          | BELT WIPERS                | 4   |
| 91       |          | SADDLE KNEE WIPER PLATE    | 2   |
| 92       |          | GIB BRACKET                | 2   |
| 93       |          | GIB                        | 2   |
| 94       |          | GIB SCREW                  | 2   |
| 95       |          | GIB SCREW                  | 4   |
| 96       |          | GIB SCREW                  | 8   |
| 97       |          | GIB SCREW                  | 2   |
| 98       | HC-014   | TABLE LOCK BOLT            | 2   |
| 99       | HA-125   | TABLE LOCK BOLT HANDLE     | 2   |
| 100      | HC-015   | SADDLE LOCK PLUNGER        | 2   |
| 101      |          | SADDLE LOCK PLUNGER HANDLE | 2   |
| 102      |          | CAP SCREW                  | 2   |
| 103      |          | COVER                      | 4   |
| 104      |          | CAP SCREW                  | 1   |
| 105      |          | TABLE STOP ASSEMBLY        | 4   |
| 106      |          | OIL VALVE                  | 1   |
| 107      |          | VALVE ADAPTOR              | 1   |
| 108      | HD-039   | TAP BRACKET                | 1   |
| 109      |          | HOSE ADAPTOR               | 1   |
| 110      |          | CAP SCREW                  | 1   |
| 111      | AD-036   | COOLANT PIPE               | 2   |

# LEAD SCREW ASSEMBLY



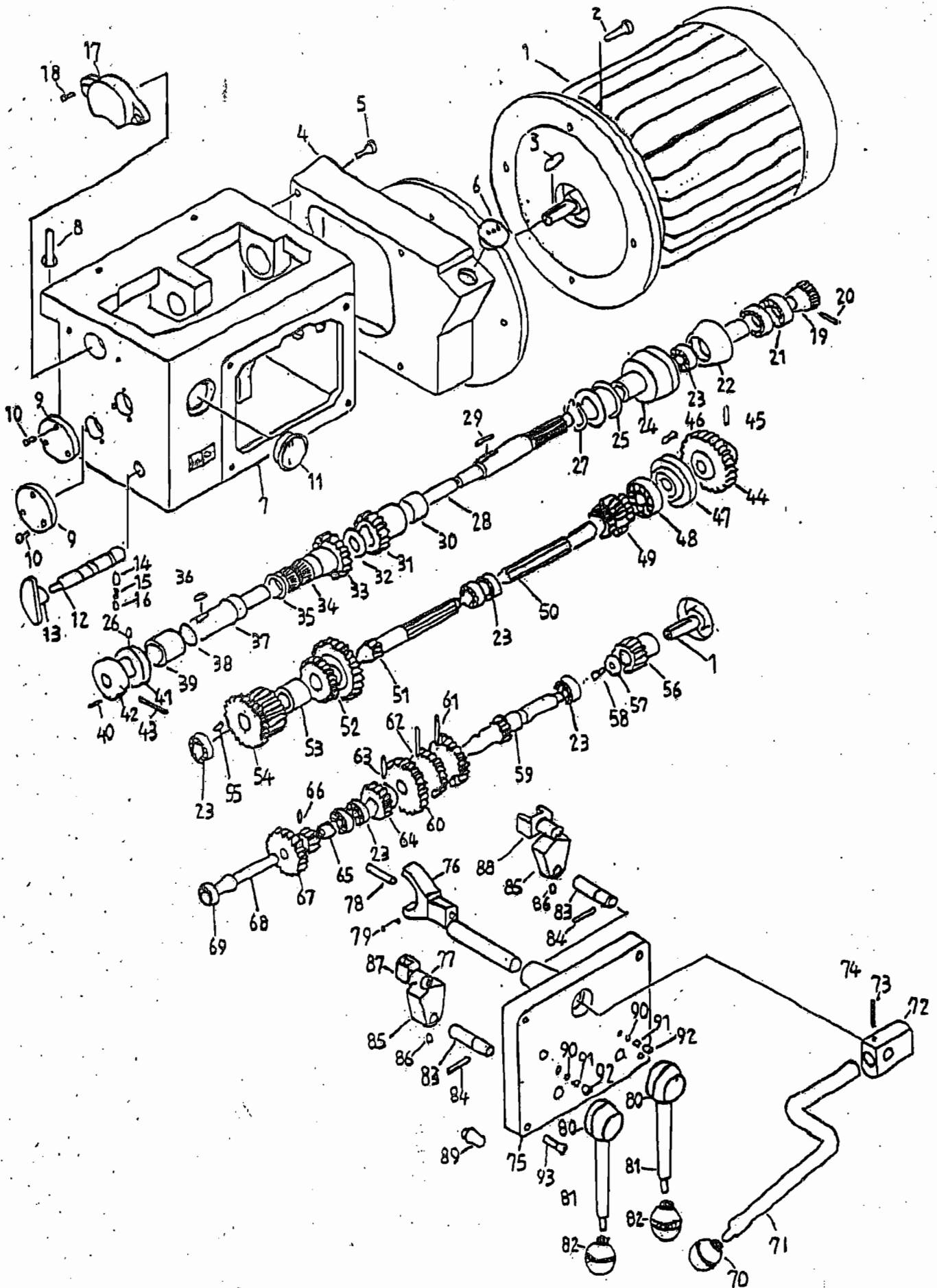
# PARTS LIST - LEAD SCREW ASSEMBLY

| ITEM NO. | COMP NO. | DESCRIPTION          | QTY |
|----------|----------|----------------------|-----|
| 1        |          | BEARING LOCKNUT      | 5   |
| 2        |          | BUSHING              | 1   |
| 3        |          | GEAR                 | 1   |
| 4        |          | GEAR BRACKET         | 1   |
| 5        |          | SORM GEAR            | 1   |
| 6        |          | SPINDLE GEAR HUB     | 1   |
| 7        |          | KEY                  | 1   |
| 8        |          | KEY                  | 1   |
| 9        |          | BUSHING              | 1   |
| 10       |          | BUSHING              | 1   |
| 11       |          | KEY                  | 1   |
| 12       |          | CLUTCH SPINDLE       | 1   |
| 13       |          | SPINDLE GEAR HUB     | 1   |
| 14       |          | WORM GEAR            | 1   |
| 15       |          | SCREW BUSHING        | 1   |
| 16       |          | GEAR BRACKET         | 1   |
| 17       |          | BUSHING              | 1   |
| 18       |          | CAP SCREW            | 3   |
| 19       |          | GEAR BRACKET         | 1   |
| 20       |          | BUHSING              | 1   |
| 21       |          | LOCK WASHER          | 2   |
| 22       |          | GEAR BRACKET         | 1   |
| 23       |          | GEAR BUSHING         | 1   |
| 24       |          | CAP SCREW            | 10  |
| 25       |          | WORM GEAR            | 1   |
| 26       |          | SHAFT                | 1   |
| 27       |          | KEY                  | 1   |
| 28       |          | BEARING              | 1   |
| 29       |          | SNAP RING            | 1   |
| 30       |          | BALL BEARING         | 1   |
| 31       |          | BEARING              | 1   |
| 32       |          | GEAR SHAFT           | 1   |
| 33       |          | KEY                  | 1   |
| 34       |          | BALL BEARING         | 1   |
| 35       |          | GEAR                 | 1   |
| 36       |          | SNAP RING            | 1   |
| 37       |          | CLUTCH SPINDLE CLAMP | 1   |
| 38       |          | SINE BAR SHAFT       | 1   |
| 39       |          | GEAR SHAFT           | 1   |
| 40       |          | GEAR BAR             | 2   |
| 41       |          | BUSHING              | 1   |
| 42       |          | DIAL                 | 1   |
| 43       |          | BUSHING              | 1   |
| 44       |          | SPRING               | 1   |
| 45       |          | HANDLE BAR           | 1   |
| 46       |          | HANDLE               | 1   |
| 47       |          | WORM GEAR            | 1   |
| 48       |          | DIAL                 | 1   |
| 49       |          | CAP SCREW            | 3   |
| 50       |          | BEARING LOCKNUT      | 2   |
| 51       |          | KEY                  | 1   |
| 52       |          | SHAFT                | 1   |
| 53       |          | DIAL                 | 1   |
| 54       |          | SCREW                | 1   |
| 55       |          | BUSHING              | 1   |

# PARTS LIST - LEAD SCREW ASSEMBLY

| ITEM NO. | COMP NO. | DESCRIPTION     | QTY |
|----------|----------|-----------------|-----|
| 56       |          | SPRING          | 1   |
| 57       |          | HAND WHEEL      | 1   |
| 58       |          | HANDLE          | 1   |
| 59       |          | KNOB            | 1   |
| 60       |          | CAP SCREW       | 1   |
| 61       |          | SCREW COVER     | 1   |
| 62       |          | LOCKNUT         | 1   |
| 63       |          | LOCK WASHER     | 1   |
| 64       |          | SCREW BRACKET   | 1   |
| 65       |          | SCREW SHAFT     | 1   |
| 66       |          | TABLE           | 1   |
| 67       |          | SCREW BRACKET   | 1   |
| 68       |          | SNAP RING       | 1   |
| 69       |          | SCREW COVER     | 1   |
| 70       |          | CAP SCREW       | 8   |
| 71       |          | CAP SCREW       | 1   |
| 72       |          | KNOB            | 1   |
| 73       |          | HAND WHEEL      | 1   |
| 74       |          | HANDLE          | 1   |
| 75       |          | SPRING          | 1   |
| 76       |          | BUHSING         | 1   |
| 77       |          | LOCKNUT         | 1   |
| 78       |          | LOCK WASHER     | 1   |
| 79       |          | BALL BEARING    | 1   |
| 80       |          | BEARING BRACKET | 1   |
| 81       |          | BALL BEARING    | 1   |
| 82       |          | SCRW SHAFT      | 1   |
| 83       |          | BUHSING         | 1   |
| 84       |          | SCREW BARCKET   | 1   |
| 85       |          | BUHSING         | 1   |
| 86       |          | CAP SCREW       | 4   |
| 87       |          | CAP SCREW       | 8   |
| 88       |          | BEARING         | 3   |

# GEAR BOX



# PARTS LIST - GEAR BOX

| ITEM NO. | COMP NO. | DESCRIPTION         | QTY |
|----------|----------|---------------------|-----|
| 1        |          | MOTOR               | 1   |
| 2        |          | CAP SCREW           | 4   |
| 3        |          | KEY                 | 1   |
| 4        |          | GEAR HOUSE          | 1   |
| 5        |          | CAP SCREW           | 4   |
| 6        |          | OIL KNOB            | 1   |
| 7        |          | GEAR BOX            | 1   |
| 8        |          | CAP SCREW           | 2   |
| 9        |          | GEAR COVER          | 2   |
| 10       |          | CAP SCREW           | 6   |
| 11       |          | OIL LEVER           | 1   |
| 12       |          | SPEED CHANGE SHAFT  | 1   |
| 13       |          | SPEED CHANGE KNOB   | 1   |
| 14       |          | STEEL PLUNGER       | 1   |
| 15       |          | SPRING              | 1   |
| 16       |          | SET SCREW           | 1   |
| 17       |          | ALUMINUM COVER      | 1   |
| 18       |          | CAP SCREW           | 2   |
| 19       |          | PINION              | 1   |
| 20       |          | SPRING              | 1   |
| 21       |          | RAIL BEARING        | 2   |
| 22       |          | BEARING COVER       | 1   |
| 23       |          | BEARING             | 7   |
| 24       |          | BEARING COVER       | 1   |
| 25       |          | CLUTCH RING         | 1   |
| 26       |          | SET SCREW           | 1   |
| 27       |          | SNAP RING           | 1   |
| 28       |          | PINION SHAFT        | 1   |
| 29       |          | KEY                 | 1   |
| 30       |          | PINION SPACER       | 1   |
| 31       |          | PINION              | 1   |
| 32       |          | WASHER              | 1   |
| 33       |          | PINION              | 1   |
| 34       |          | NEEDLE BEARING      | 2   |
| 35       |          | SNAP RING           | 1   |
| 36       |          | KEY                 | 1   |
| 37       |          | CLUTCH SHAFT        | 1   |
| 38       |          | "O" RING            | 1   |
| 39       |          | GEAR                | 1   |
| 40       |          | TAPER SHEAR PIN     | 1   |
| 41       |          | COLLAR              | 1   |
| 42       |          | COLLAR              | 1   |
| 43       |          | SPRING PIN          | 1   |
| 44       |          | GEAR                | 1   |
| 45       |          | PIN                 | 1   |
| 46       |          | CAP SCREW           | 3   |
| 47       |          | PINION SHAFT SLEEVE | 1   |
| 48       |          | BEARING             | 1   |
| 49       |          | CLUSTER PINION      | 1   |
| 50       |          | PINION SHAFT        | 1   |
| 51       |          | PINION              | 1   |
| 52       |          | CLUSTER GEAR        | 1   |
| 53       |          | GEAR SPACER         | 1   |
| 54       |          | CLUSTER GEAR        | 1   |
| 55       |          | PIN                 | 1   |

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| ITEM NO. | COMP NO. | DESCRIPTION             | QTY |
|----------|----------|-------------------------|-----|
| 56       |          | PINION                  | 1   |
| 57       |          | WASHER                  | 1   |
| 58       |          | SCREW                   | 1   |
| 59       |          | PINION SHAFT            | 1   |
| 60       |          | CLUSTER GEAR            | 1   |
| 61       |          | SPRING PIN              | 1   |
| 62       |          | SPRING PIN              | 1   |
| 63       |          | SPRING PIN              | 1   |
| 64       |          | PINION                  | 1   |
| 65       |          | GEAR SPACER             | 1   |
| 66       |          | SPRING PIN              | 1   |
| 67       |          | GEAR                    | 1   |
| 68       |          | SHAFT                   | 1   |
| 69       |          | BEARING                 | 1   |
| 70       |          | HANDLE                  | 1   |
| 71       |          | FAST MOVE OPERATION BAR | 1   |
| 72       |          | CRANK BOLCK             | 1   |
| 73       |          | SPRING PIN              | 1   |
| 74       |          | BEARING                 | 1   |
| 75       |          | GEAR BOX COVER          | 1   |
| 76       |          | CLUTCH RING CLAMP       | 1   |
| 77       |          | CLAMP SHAFT             | 1   |
| 78       |          | PIN                     | 1   |
| 79       |          | SPRING PIN              | 1   |
| 80       |          | HANDLE HUB              | 2   |
| 81       |          | HANDLE BAR              | 2   |
| 82       |          | HANDLE                  | 2   |
| 83       |          | SHAFT                   | 2   |
| 84       |          | SPRING PIN              | 2   |
| 85       |          | SHAFT CRANK             | 2   |
| 86       |          | SET SCREW               | 2   |
| 87       |          | M-N CLAMP               | 1   |
| 88       |          | C-A-P CLAMP             | 1   |
| 89       |          | STOPPER                 | 1   |
| 90       |          | BALL                    | 2   |
| 91       |          | SPRING                  | 2   |
| 92       |          | SET SCREW               | 2   |
| 93       |          | CAP SCREW               | 4   |