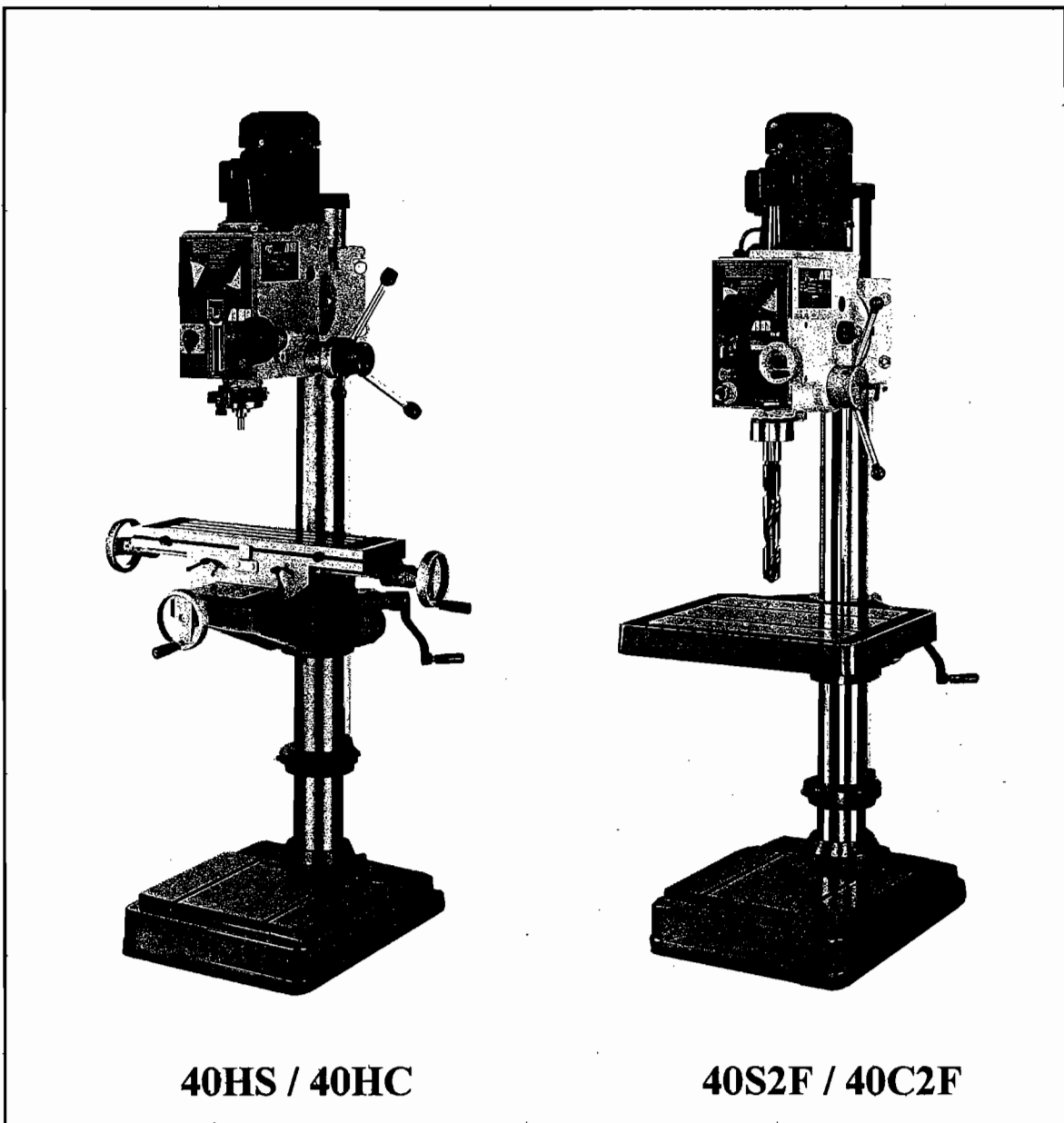


COPY

# COMPLEX MACHINE



**40HS / 40HC**

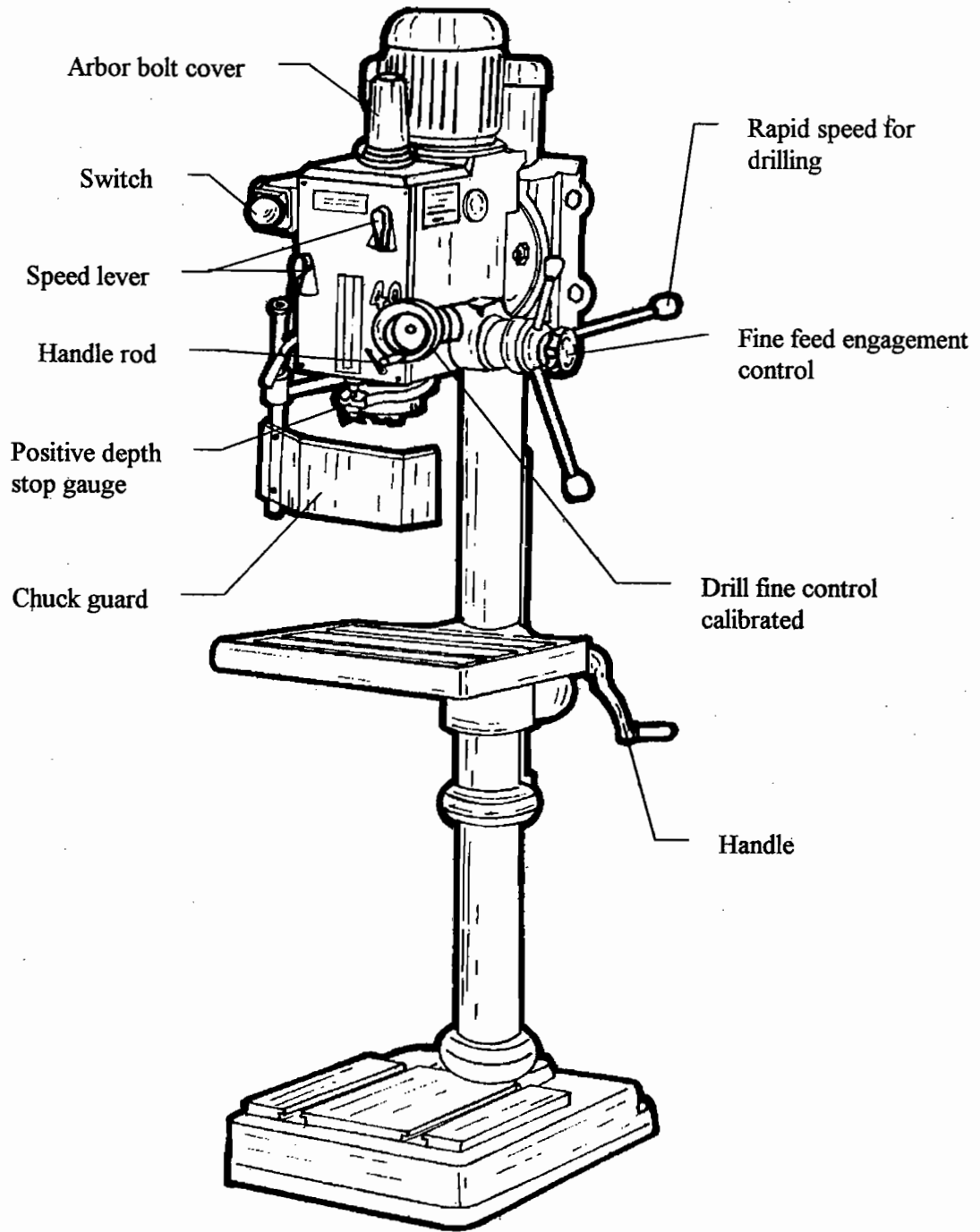
**40S2F / 40C2F**

MODEL 40HS/40HC & 40S2F/40C2F  
INSTRUCTION MANUAL

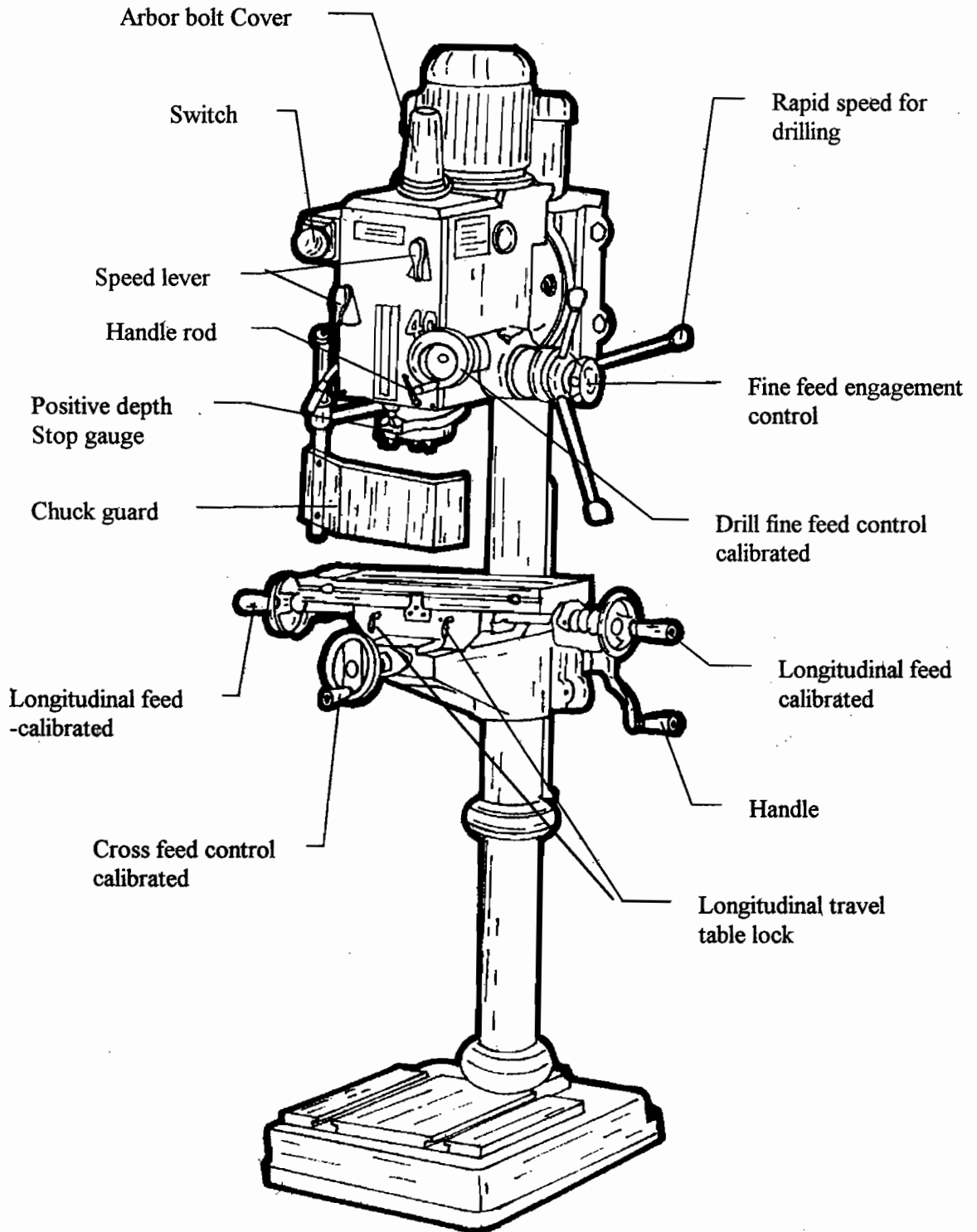


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## Overall Aspect



### Overall Aspect



**WARNING: FAILURE TO FOLLOW THESE RULES  
MAY RESULT IN SERIOUS PERSONAL INJURY**

As with all machinery there are certain hazards involved with operation and use of the machine. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

This machine was designed for certain applications only. We strongly recommends that this machine NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the machine until you contact with us and we have advised you.

**Your machine might not come with a power socket or plug. Before using this machine, please Do ask your local dealer to install the socket or plug on the power cable end.**

**SAFETY RULES FOR ALL TOOLS**

**A. USER:**

1. **WEAR PROPER APPAREL.** No loose clothing, gloves, rings, bracelets, or other jewelry to get caught in moving parts.

Non-slip foot wear is recommended. Wear protective hair covering to contain long hair.

2. **ALWAYS WEAR EYE PROTECTION.** Refer to ANSLZ87.1 standard for appropriate recommendations.

Also use face or dust mask if cutting operation is dusty.

3. **DON'T OVERREACH.** Keep proper footing and balance at all times.

4. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.

5. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.

6. **DRUGS, ALCOHOL, MEDICATION.** Do not operate tool while under the influence of drug, alcohol or any medication.

**B. USE OF MACHINE:**

1. **DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.

2. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.

3. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your

hand frees both hands to operate tool.

**4. USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause hazards.

**5. AVOID ACCIDENTAL STARTING.** Make sure switch is in "OFF" position before plugging in power cord.

#### **C. ADJUSTMENT :**

**MAKE** all adjustments with the power off. In order to obtain the machine. precision and correct ways of adjustment while assembling, the user should read the detailed instruction in this manual.

#### **D. WORKING ENVIRONMENT:**

**1. KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.

**2. DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well-lighted.

**3. KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.

**4. DON'T** install & use this machine in explosive, dangerous environment.

#### **E. MAINTENANCE**

**1. DISCONNECT** machine from power source when making repairs.

**2. CHECK DAMAGED PARTS.** To read every details of trouble shooting, repair it very carefully and make sure the operator won't get injure and damage the machine.

Thank you for purchasing the **COMPLEX** Machine. If properly cared for and operated, this machine can provide you with years of accurate service. Please read this manual carefully before using your machine.

## 1. SPECIFICATION

MODEL			40HS (40S2F)	40HC (40C2F)
Drilling capacity			32 mm (1 <sup>1</sup> / <sub>4</sub> " )	32 mm (1 <sup>1</sup> / <sub>4</sub> " )
Face mill capacity				100 mm (4")
End mill capacity				20 mm (3 <sup>3</sup> / <sub>4</sub> " )
Head swivel			360°	360°
Spindle taper			MT-3 or NT-30	MT-3 or R-8 or NT-30
Spindle stroke			130 mm (5")	130 mm (5")
Quill diameter			76 mm (3")	76 mm (3")
Motor			3Ø 1 HP 1Ø 1 <sup>1</sup> / <sub>2</sub> HP	3Ø 1 HP 1Ø 1 <sup>1</sup> / <sub>2</sub> HP
Spindle speed (RPM)	12S	125-2140	50,110,190,380,670, 1250 (4P)	50,110,190,380,670, 1250
		150-2500	60,130,230,450,800, 1500 (4P)	60,130,230,450,800, 1500
Column diameter			115 mm (4 <sup>1</sup> / <sub>2</sub> " )	115 mm (4 <sup>1</sup> / <sub>2</sub> " )
Swing			520 mm (20 <sup>7</sup> / <sub>16</sub> " )	520 mm (20 <sup>7</sup> / <sub>16</sub> " )
Spindle to base (MAX.)			1200 mm (47")	1200 mm (47")
Table working area			470 x 540 mm (18 <sup>1</sup> / <sub>2</sub> " x 21 <sup>1</sup> / <sub>4</sub> " )	585 x 190 mm (23" x 7 <sup>1</sup> / <sub>2</sub> " )
Overall height			1920 mm (75 <sup>9</sup> / <sub>16</sub> " )	1920 mm (75 <sup>9</sup> / <sub>16</sub> " )
Overall width			610 mm (24 <sup>5</sup> / <sub>32</sub> " )	762 mm (30")
Overall depth			711 mm (28")	711 mm (28")
Net / Gross weight			270 / 300 kgs	280 / 310 kgs
* Extra accessories				
3-1/2" vise				
Work light				
Coolant pump				
NT 30 spindle				
52 pcs clamping kits				
Tapping switch				
Collect chuck (4,6,8,10,12 mm / set)				
NOISE			80dB MAX	



## Tools selection & proper material range

Tool type	Tool material	Work piece material
End mill	HSS	Non-iron material steel iron
	TUNGSTEN CARBIDE	Cast iron non-iron material
Face mill	TUNGSTEN CARBIDE	Non-iron material steel iron Light material
Drilling	HSS	Non-iron material steel iron Light material
Tapping	HSS	Non-iron material steel iron Light material

## 2. FEATURES

- (1) This machine has, several uses, such as drilling and also can be equipped with an electric switch for tapping.
- (2) This machine is of fine quality, can be operated easily, and it is not limited to skilled operators.
- (3) The drilling operation can be performed by two methods:
  - 1). Hand operation, which makes quick drilling.
  - 2). Worm gear feed operation, which makes slow milling.
- (4) Bronze adjustable nuts, which adjust the thread clearance and reduce the wear. They also make screws rotated smoothly and increase the thread accuracy.
- (5) Whole column which makes this machine strong, stable, and also keep the high accuracy.
- (6) Head of tough cast ensures its accuracy lasting and enduring through the treatment of precise boring cylinder, grinding, and internal stress relief.

## 3. DELIVERY & INSTALLATION

### Unpacking

1. Transportation to desired location before unpacking, please use lifting jack.(Fig. B)
2. Transportation after unpacking, please use heavy duty fiber belt to lift up the machine.

**ALLWAYS KEEP PROPER FOOTING & BALANCE WHILE MOVING THIS MACHINE.**

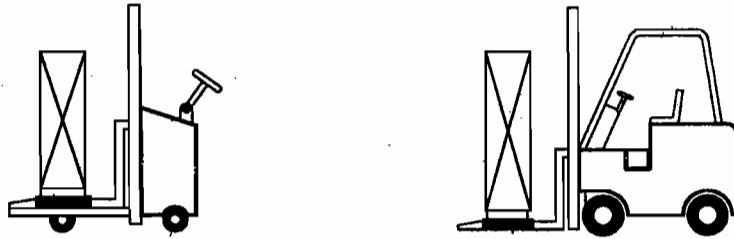


Fig.B

**Installation:**

- (1) **BE SURE** all locks of head-stock & column are tighten before operation.
- (2) **ALWAYS** Keep proper footing & balance while moving this 760lbs machine. And **only** use heavy duty fiber belt to lift the machine.
- (3) **KEEP** machine always out from sun, dust, wet, raining area.
- (4) **POSITION** & tighten 3 bolts into base holes properly after machine in balance.
- (5) **TURN OFF** the power before wiring & be sure machine in proper grounding. Overload & circuit breaker is recommended for safety wiring.
- (6) **CHECK** carefully if main shaft in clockwise direction while running test. If not, reverse the wiring then, repeat the test till spindle direction is correct.
- (7) **Finish** removing this wooden case/crate from the machine. Unbolt the machine from the crate bottom.
- (8) **Bolt** the stand legs to the floor, while using a sturdy stand.

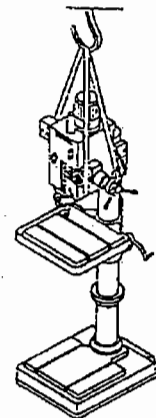
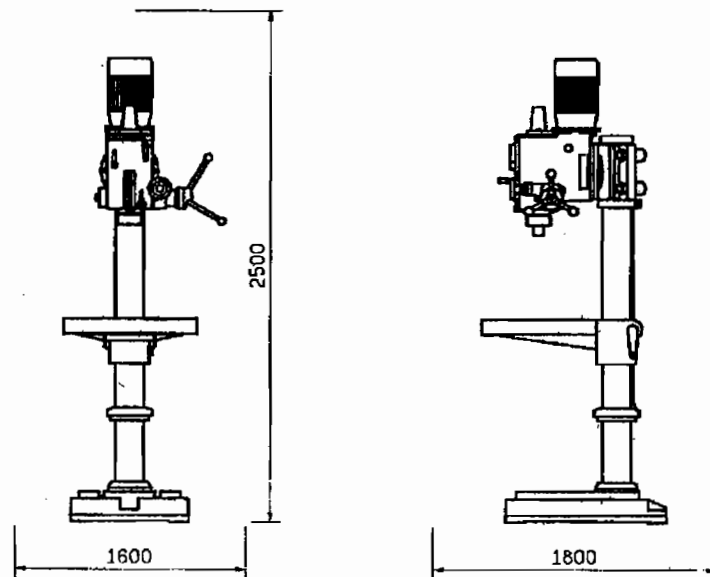
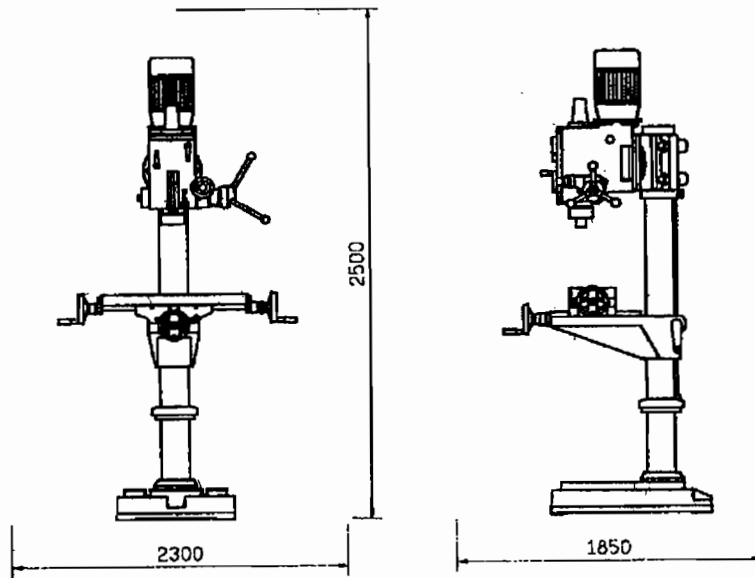


Fig. A

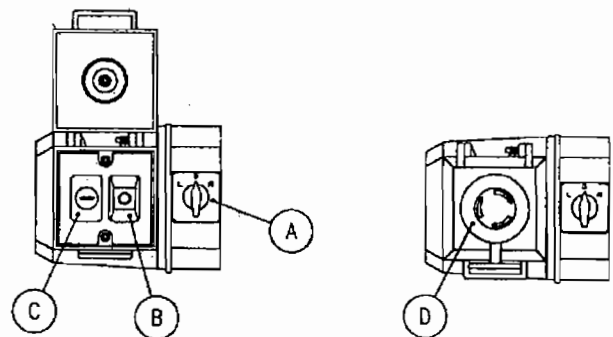
#### 4. MINIMUM ROOM SPACE FOR MACHINE OPERATION



## 5. USE OF MAIN MACHINE PARTS (See Fig. 1)

- (1) To raise and lower the head by table.
- (2) Equipped with an electric switch for tapping operation clockwise or counterclockwise.
- (3) To adjust the quick or slow feeding by feed handle.
- (4) To adjust the table left and right travel by table handle wheel.
- (5) To adjust the table fore and after travel by table handle wheel.
- (6) To operate the spindle handle wheel for micro feed.
- (7) To adjust the scale size according to working need.
- (8) Switch button function description.

- (a) Before starting the machine turn the selection knob (A) to (right for clock wise running, left for counter clock wise)
- (b) Push button (C) to start the machine.
- (c) Push button (B) to stop the machine.
- (d) When in emergency push button to stop the machine. after clearing the trouble, release emergency button, re-start the machine by pushing the start button.



## 6. PRECAUTION FOR OPERATION

Check all parts for proper condition before operation; if normal safety precautions are notice carefully, this machine can provide you withstanding of accurate service.

### (1) Before Operation

- (a) Fill the lubricant.
- (b) In order to keep the accurate precision, the table must be free from dust and oil deposits.
- (c) Check to see that the tools are correctly set and the work-piece is set firmly.
- (d) Be sure the speed is not set too fast.
- (e) Be sure everything is ready before use.

### (2) After Operation

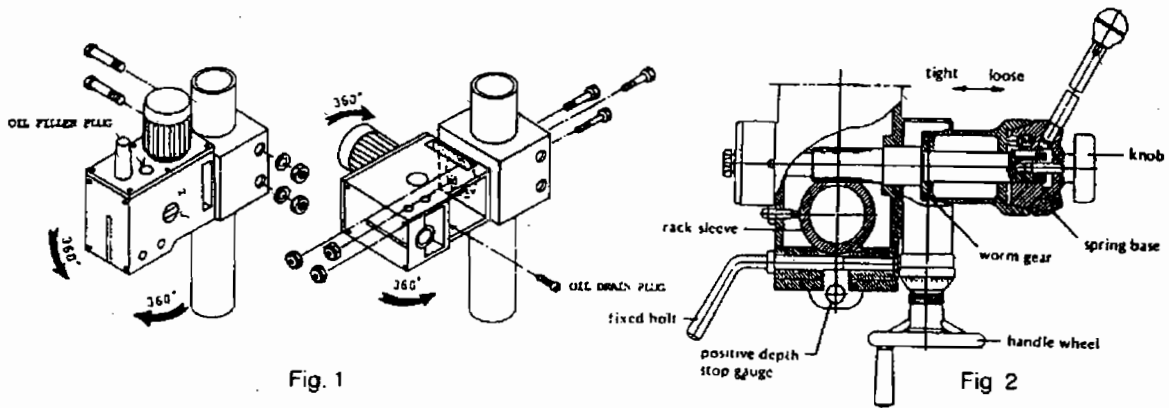
- (a) Turn off the electric switch.
- (b) Turn down the tools.
- (c) Clean the machine and coat it with lubricant.
- (d) Cover the machine with cloth to keep out the dust.

### (3) Adjustment of Head

- (a) Head may be rotated 360" by loosening the two heavy duty head lock nuts. Adjust the head to the desired angle, then fix the heavy duty head lock-nuts. It is tighten the same time to fix the head if

drilling & milling too much.

- (b) Unscrew 3 nuts while the work-piece needs to be bevel drilled turn to the degrees you wish on the scale, then screw the 3.



- (4) Preparing for Drilling (see fig. 2)(Except addition power feed system).

Turn of the knob make loose the taper body of worm gear and spring base. Then we decide spindle stroke setting the positive depth stop gauge for drilling blind hole or free state for pass hole.

- (5) Preparing for Milling (see fig. 2)(Except addition power feed system).

(a) Adjust the positive depth stop gauge to highest point position.

(b) Turn tight of the knob be use to taper friction force coupling the worm gear and spring base.

Then turning the handle wheel by micro set the spindle of work piece machining height.

(c) Lock the rack sleeve at the desired height with fixed bolt.

#### **QUILL RETURN SPRING ADJUSTMENT:**

Spring tension for return of spindle, after hole drilling, has been pre-set at the factory. No further adjustment should be attempted unless absolutely necessary. Adjustment will probably be required if a multiple drilling or tapping head is used. If adjustment is necessary, loosen lock screw while holding. Do not allow the housing to turn in your hand, or spring will unwind. Turn entire housing assembly clockwise the number of turns necessary to cause the quill to return to its up position. (NOTE. The flat of the spring housing pilot is lined up with the spring loading hole on the body of the spring housing.) Reset lock screw make sure point of screw mates to flat on the housing journal.

#### **7. ADJUSTING TABLE SLACK AND COMPENSATE FOR WEAR (see Fig. 3)**

- (1) Your machine is equipped with Jib strip adjustment to compensate for wear and excess slack on cross and longitudinal travel.
- (2) Clockwise rotation the job strip bolt with a big screw for excess slack otherwise a little counter clockwise if too tight.
- (3) Adjust the jib strip bolt until feel a slight drag when shifting the table.

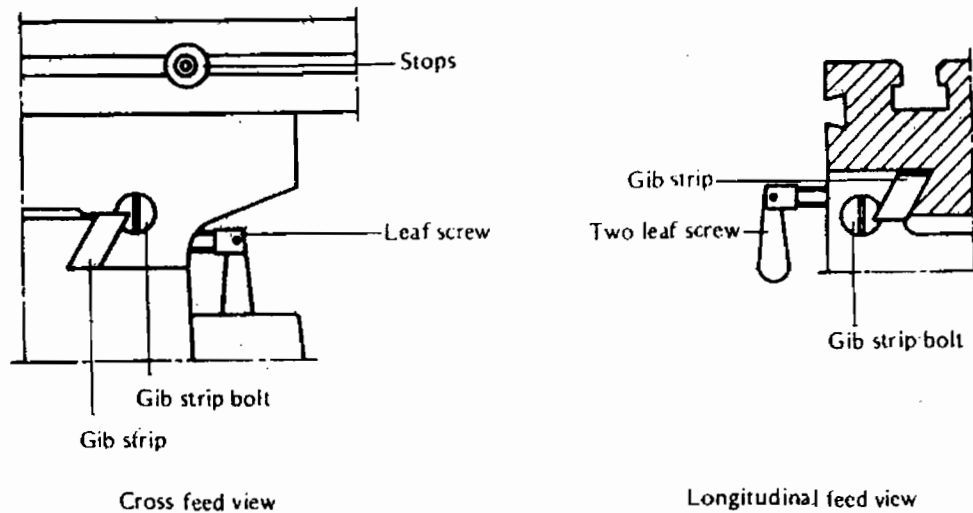


Fig. 3

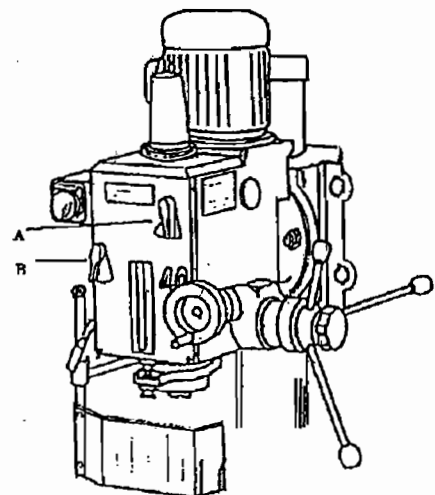
### 8. CLAMPING, TABLE BASE, AND MACHINE BASE (see Fig. 3)

- (1) When milling longitudinal feed, it is advisable to lock the cross feed table travel to insure the accuracy of your work. To do this, tighten the small leaf screw located on the right side of the table base.
- (2) To tighten the longitudinal feed travel of the table for cross feed milling, tighten the two small leaf screw on the front of the table base
- (3) Adjustable travel stops are provided on the front of the table for control of cross travel and the desired milling length.

### 9. SPEED CHANGING AND ADJUST BELT (Step See Fig. 4)

- (1) Turn power off.
- (2) Select the suitable R.P.M. from speed charts of table 1.
- (3) Turn the speed lever A and B to correct position.
- (4) Turn on the power.

Fig. 4



#### **CAUTION FOR SWITCH:**

When changing the running direction of the spindle, forward to reverse or reverse to forward, STOP THE MOTOR POWER first. absolutely do not change the spindle running direction when machine is running. Improper operation of the switch may cause to the switch, machine or danger to operator.

**WARNING: CHANGE SPEED ONLY WHEN MACHINE IS STOPPED**

<b>RPM</b> <b>LEVERS</b>	<b>50Hz</b>	<b>60Hz</b>
L1	105	90
L2	300	250
L3	390	325
H1	515	430
H2	1400	1170
H3	1820	1520

Table .1

**10. TO CHANGE TOOLS**

**(1) Removing Face Mill or Drill Chuck Arbor**

Loosen the arbor bolt (see fig. 4) at the top of the spindle shaft approximately 2 turns with a wrench. Rap the top of the arbor bolt with a mallet. After taper has been broken loose, holding chuck arbor on hand and turn detach the arbor bolt with the other hand.

**(2) To Install Face Mill or Cutter Arbor**

Insert cutter and cutter arbor into the taper of spindle. Tighten arbor bolt detach securely, but do not over-tighten.

**(2) Removing Taper Drills**

(a) Turn down the arbor bolt and insert the taper drill into the spindle shaft.

(b) Turn the rapid down handle rod down until the oblong hole in the rack sleeve appears.

Line up this hole with the hole in the spindle. Insert key punch key through holes and strike lightly with a mallet. This will force the taper drill out.

**11. ORDERING REPLACEMENT PARTS**

Complete parts list is attached. If parts are needed, contact your local distributor.

**12. EXTRA TOOLING AND ACCESSORIES**

Each of machines is equipped with a MT # 3 spindle taper or R8 spindle taper (examples below). Contact your local distributor or a major cutting tool distributor to obtain any of these accessories.

Taper Drills

Reamers

End Mills  
Cutter Arbor  
Taps  
Collets  
Adapters and Sleeves

### 13. TAPPING EQUIPMENT

This machine can be equipped with an electric switch for tapping operation clockwise or counter-clockwise, and the working depth also can be adjusted by the limit switch. (Electric switch will be installed according to your requirement, and you must pay the cost only.)

### 14. SPINDLE POWER DOWN FEED OPERATION

1. Select profitable spindle speed and automatic feeding rate according to cutting condition.

By adjusting the shift dial A you can obtain the feed rate you need.

2. **FEEDING DEPTH SETTING:**

First release the dial fix-nut E and turn the indicating ring C to the depth needed. then reset E tightly again.

**CAUTION: DO NOT LET FEEDING DEPTH EXCEED SPINDLE STROKE.**

3. **START FEEDING**

Start the machine and push out the handle rod D, then the spindle will feed down automatically until the end of stroke you set.

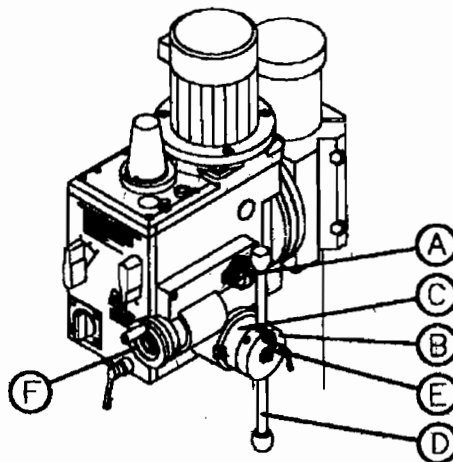
4. **END OF AUTO FEEDING**

The spindle will return to top when reaching the end of stroke you set. when in emergency or desire to stop the motion during feeding, push back the handle rod D to its original place.

5. **MICRO FEEDING BY MANUAL**

Set the shift dial A to "0" position, and start feeding by turning F handle.

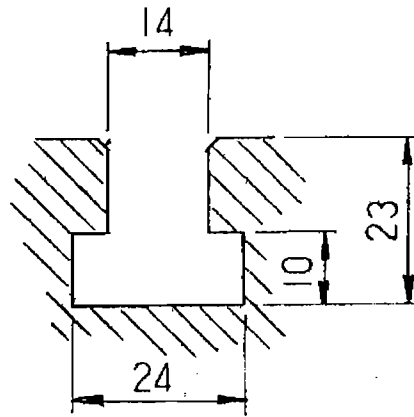
6. To prevent danger, when spindle power down feed is not in use, please lock the handle B well.





## 15. SPECIFICATION OF T-SOLT

The size of T-Solt on table as Fig 6:



RF-40HC (CPF)

Fig. 6

## 16. MAINTAINING

That's easier to keep machine in good condition or best performance by means of maintaining it at any time than remedy it after it is out of order.

### (1) Daily Maintenance (by operator)

- (a) Fill the lubricant before starting machine everyday.
- (b) If the temperature of spindle caused over-heating or strange noise, stop machine immediately to check it for keeping accurate performance.
- (c) Keep work area clean; release vise, cutter, work-piece from table; switch off power source; take chip or dust away from machine and follow instructions lubrication or coating rust proof oil before leaving.

### (2) Weekly Maintenance

- (a) Clean and coat the cross leading screw with oil.
- (b) Check to see if sliding surface and turning parts lack of lubricant. If the lubricant is insufficient, fill it.

### (3) Monthly Maintenance

- (a) Adjust the accurate gap of slide both on cross and longitudinal feed.
- (b) Lubricate bearing, worm, and worm shaft to avoid wear.

### (4) Yearly Maintenance

- (a) Adjust table to horizontal position for maintenance of accuracy.
- (b) Check electric cord, plugs, switches at least once a year to avoid loosening or wearing.

## 17. CLEANING & LUBRICATING

### CLEANING

- (1) Your machine has been coated with a heavy grease to protect it in shipping. This coating should be completely removed before operating the machine. Commercial degreaser, kerosene or similar

solvent may be used to remove the grease from the machine, but avoid getting solvent on belts or other rubber parts.

- (2) After cleaning, coat all possible rusted surface with a light lubricant. Lubricate all points with a medium consistency machine oil.

### **LUBRICATION:**

All ball bearings in your mill/drill are sealed for life, requiring no lubrication. Points requiring lubrication are:

- (1) Internal spline drive assembly. Keep this area well lubricated with a good grade non-hardening grease, such as Fiske Company "Lubriplate". Insert grease in the hole at the top of spindle pulley spline driver. Lube twice yearly.
- (2) A light film of oil applied to the quill and column will reduce wear, prevent rust, and assure ease of operation.
- (3) Quill return spring should receive oil (SAE 20) once yearly. Remove cover plate and apply oil with squirt can or small brush.
- (4) **IMPORTANT:** The gear box should be oiled with a lubricant such as SAE 68 oil in level.

**CHANGE OIL EVERY ONE YEAR.**

- (5) Apply Lubriplate to quill pinion every 90 days.

**NOTE.** Use extreme care when performing this operation and keep hands clear of pinch points.

When using parafin bar, do this only by turning the sheaves by hand. Do not apply with motor running.

### **18. CHANGING THE GEAR BOX OIL**

Tilt the hard stock over as shown in Fig. 1. Open the oil drain plug to allow the oil to drain from the opening completely. Then lock the oil drain plug and turn the head to be upright position. Remove the oil filler plug fill the oil to the gear box until the oil lever reach the middle of oil fluid lever indicator. Then lock the plug.

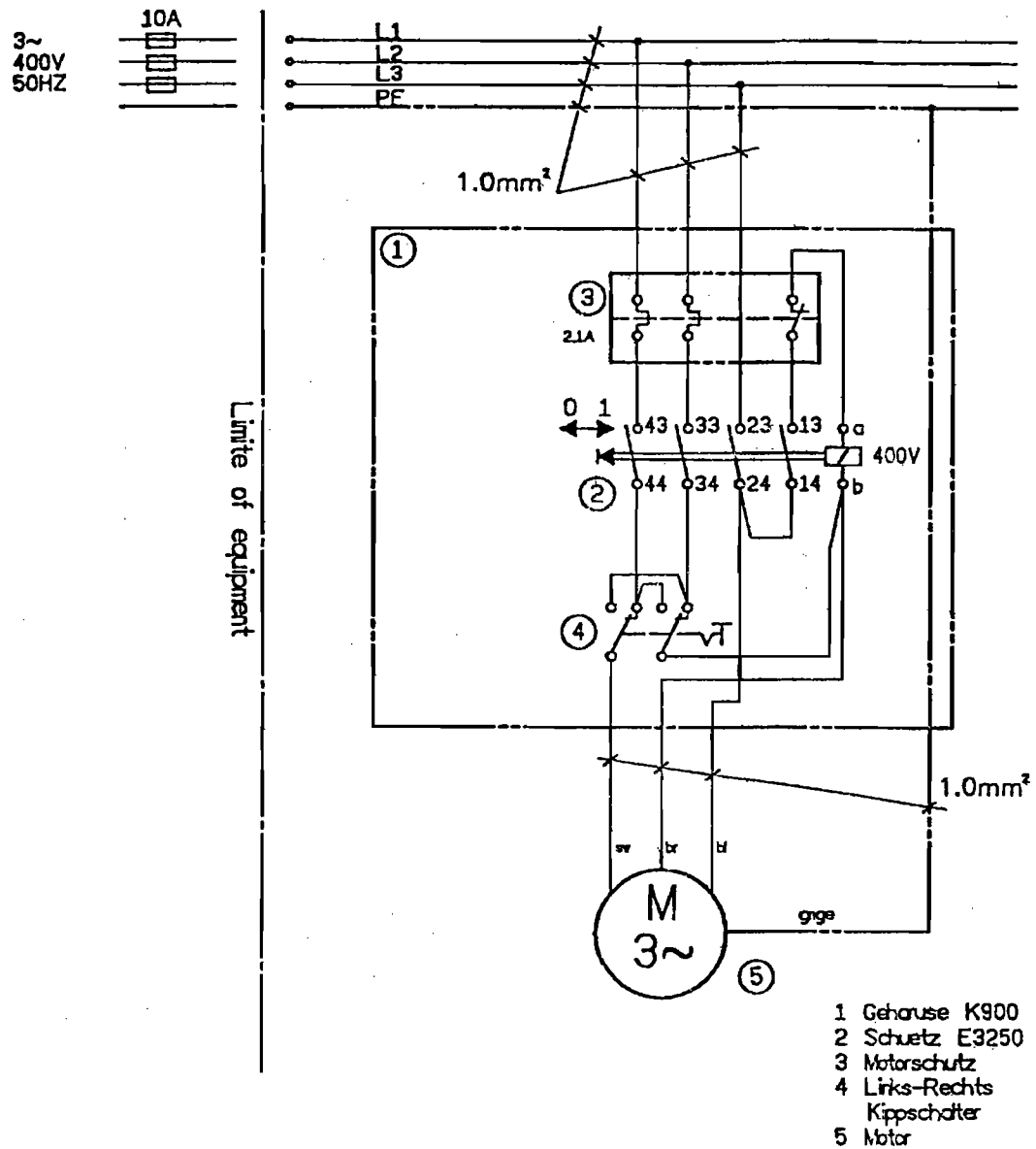
### **19. TROUBLE SHOOTING**

- (1) No running after switch on:
  - (a) Main switch interruption while volts irregular - Adjust input voltage and draw back the main switch.
  - (b) Break down of fuse in switch box - Replace with new one.
  - (c) In case of too much current, the overload relay jumps away automatically - Press the overload relay, and it will return to the correct position.
- (2) Motor Overheat and No Power:
  - (a) Overload - Decrease the load of feed.

- (b) Lower voltage - Adjust to accurate voltage.
  - (c) Spoiled contact point of magnetic switch - Replace with new one.
  - (d) Breakdown of overload relay - Connect it or replace with new one.
  - (e) Motor is poor - Replace with new one.
  - (f) Break down of fuse or poor contact with wire (it is easily, to spoil motor while short circuit)  
Switch off power source at once and replace fuse with new one.
  - (g) If this machine with the tapping attachment, there is an aid plum screw fix on the motor mount in order to avoid the motor pulleys shake while turning.
- (3) The temperature of spindle bearing is too hot:
- (a) Grease is insufficient - Fill the grease.
  - (b) The spindle bearing is fixed too tight - turning with no speed and feel the tightness with hand.
  - (c) Turning with high speed for a long time - Turn it to lightly cutting.
- (4) Lack of power with main spindle revolving:
- (a) Motor has burned out - Change a new motor.
  - (b) Fuse has burned out - Replace with new one.
- (5) Table travel has not balanced:
- (a) The gap of spindle taper too wide - Adjust bolt in proper.
  - (b) Loosening of leaf bolt - Turn and fasten in place.
  - (c) Feed too deep -Decrease depth of feed.
- (6) Shake of spindle and roughness of working surface has taken place during performance:
- (a) The gap of spindle bearing too wide - Adjust the gap in proper or replace bearing with new one.
  - (b) Spindle loosening up and down - Make two of inner bearing covers on the top tight each other.  
Do not over-tighten two inner bearing covers with the taper bearing; it is ok as long as no gap between them.
  - (c) The gap of taper sliding locate too wide - Adjust the tension of bolt in proper.
  - (d) Loosening of chuck - Fasten chuck.
  - (e) Cutter is dull - Re-sharpen it.
  - (f) Work-piece has not hold firmly - Be sure to tighten work-piece.
- (7) Micro feed does not work smoothly:
- (a) Loosening of clutch - Be sure to tighten it.
  - (b) Worm and worm shaft has worried out - Replace with new one.
  - (c) Loosening of hand-wheel fixed screw - Be sure to tighten it.
- (8) Without accuracy in performance:
- (a) The balance of the work-piece - must be considered as the principle balance while holding work-piece.
  - (b) Often use of hammer to strike work-piece - Forbidden to use hammer to strike work-piece.
  - (c) Unaccurate horizontal table - Check and maintain table for keeping accurate horizontal after a period of use.

- (9) Excessive vibration:
- (a) Motor out-of-balance. – Balance or replace problem motor.
  - (b) Bad motor. – Replace motor.
- (10) Motor stalls:
- (a) Over feeding - Reduce feed rate.
  - (b) Dull drill – Sharpen drill and keep sharp.
  - (c) Motor not building up to running speed. – Replace or repair motor. Check fuses in all three legs on three phase motors and replace if necessary.
  - (d) Bad motor. – Replace motor.
- (11) Noisy operation:
- (a) Excessive vibration. – Check remedy under excessive vibration.
  - (b) Improper quill adjustment. – Adjust quill.
  - (c) Noisy spindle. – Lubricate spindle.
  - (d) Noisy motor. – Check motor bearings or for loose motor fan.
- (12) Drill or Tool heats up or burns work:
- (a) Excessive speed. – Reduce speed.
  - (b) Chips not clearing. – Use pecking operation to clear chips.
  - (c) Dull tool. – Sharpen tool or replace.
  - (d) Feed rate too slow. – Increase feed enough to clear chips.
  - (e) Rotation of drill incorrect. – Reverse motor rotation.
  - (f) Failure to use cutting oil or coolant (on steel). – Use cutting oil or coolant on steel.
- (13) Drill leads off:
- (a) No drill spot. – Center punch or center drill work-piece.
  - (b) Cutting lips on drill off center. – Regrind drill.
  - (c) Quill loose in head. – Tighten quill.
  - (d) Bearing play. – Check bearings and reseal or replace if necessary.
- (14) Excessive drill run-out or wobble:
- (a) Bent drill. – Replace drill. Do not attempt to straighten.
  - (b) Bearing play. – Replace or reseal bearings.
  - (c) Drill not seated properly in chucks. – Loosen, reseal and tighten chuck.
- (15) Work or fixture comes loose or spins:
- Failure to clamp work-piece or work holding device to table. – Clamp work-piece or work holding device to table surface.

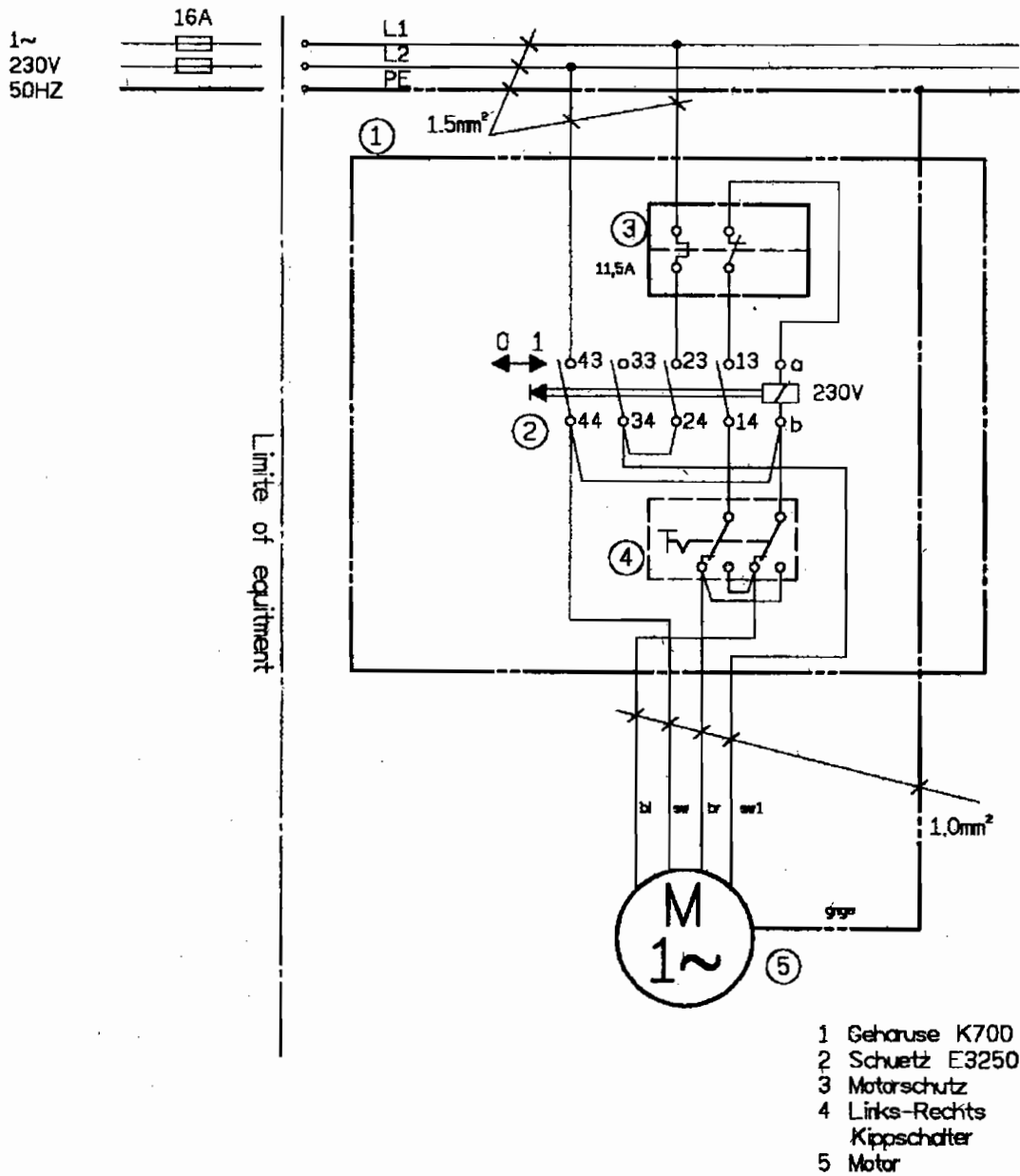
# CIRCUIT DIAGRAM



## ELECTRICAL SPECIFICATION

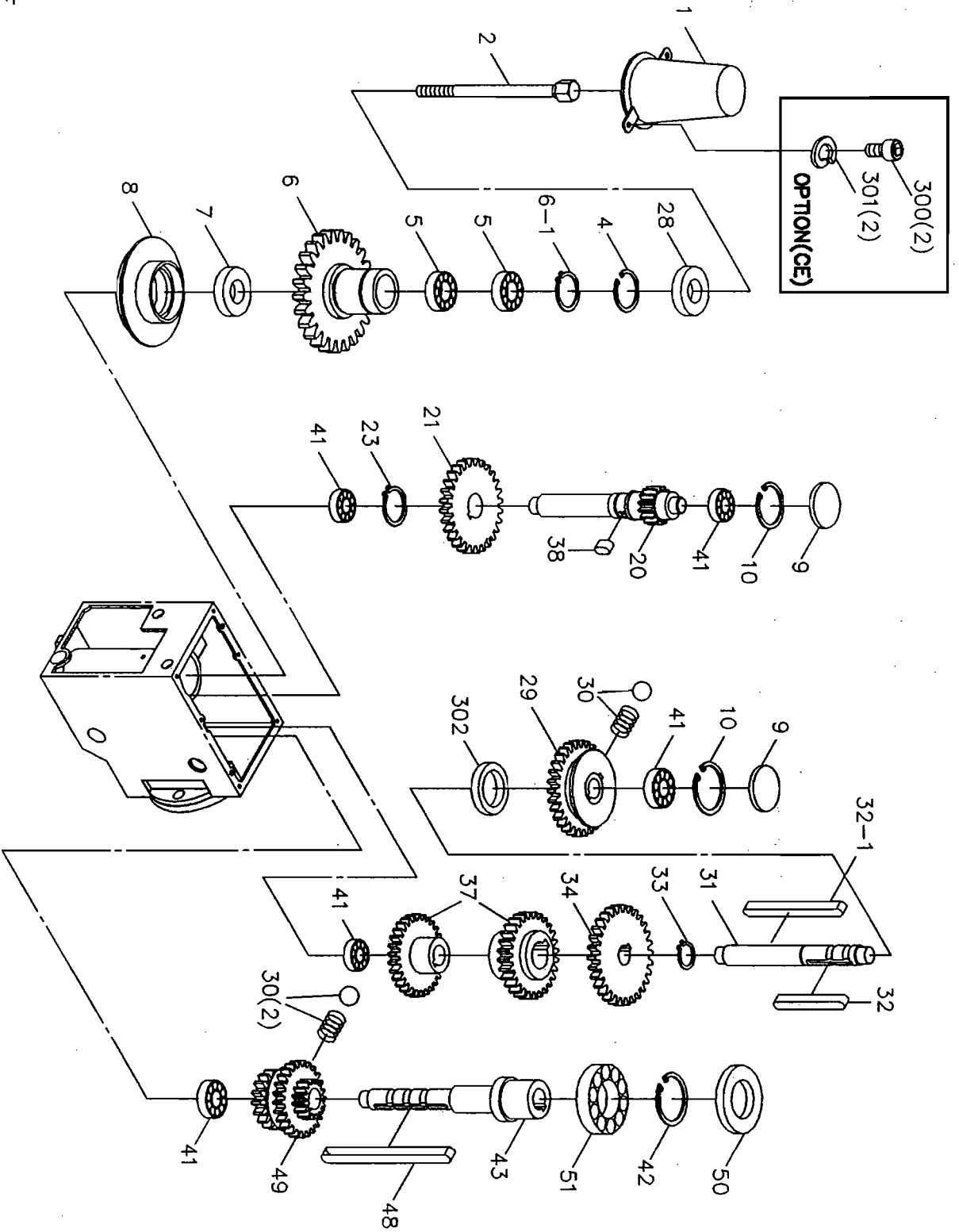
ITEM.	DESIGNATION AND FUNCTION	TECHNICAL DATA	QTY	SUPPLIER	SUPPLIER REFERENCE	REMARK
	KLINGER	IE=7.5A UE=400V UC=400V/50HZ OVERLOAD 2.1A	1	KLINGER	K900 082917	VDE0620 IEC204-1 VDE0113 Teil 1 EN60204-1/6.93
M	MOTOR	0.75KW 400V 1.8A 1420rpm	1	JUH DAH	JEF-H	

# CIRCUIT DIAGRAM



## ELECTRICAL SPECIFICATION

ITEM.	DESIGNATION AND FUNCTION	TECHNICAL DATA	QTY	SUPPLIER	SUPPLIER REFERENCE	REMARK
	KLINGER	IE=13.5A UE=230V UC=230V/50HZ OVERLOAD 11.5A	1	KLINGER	K700 082917	VDE0620 IEC204-1 VDE0113 Teil 1 EN60204-1/6.93
M	MOTOR	1.11KW 230V 11A 1420rpm	1	JUH DAH	JEF-H	



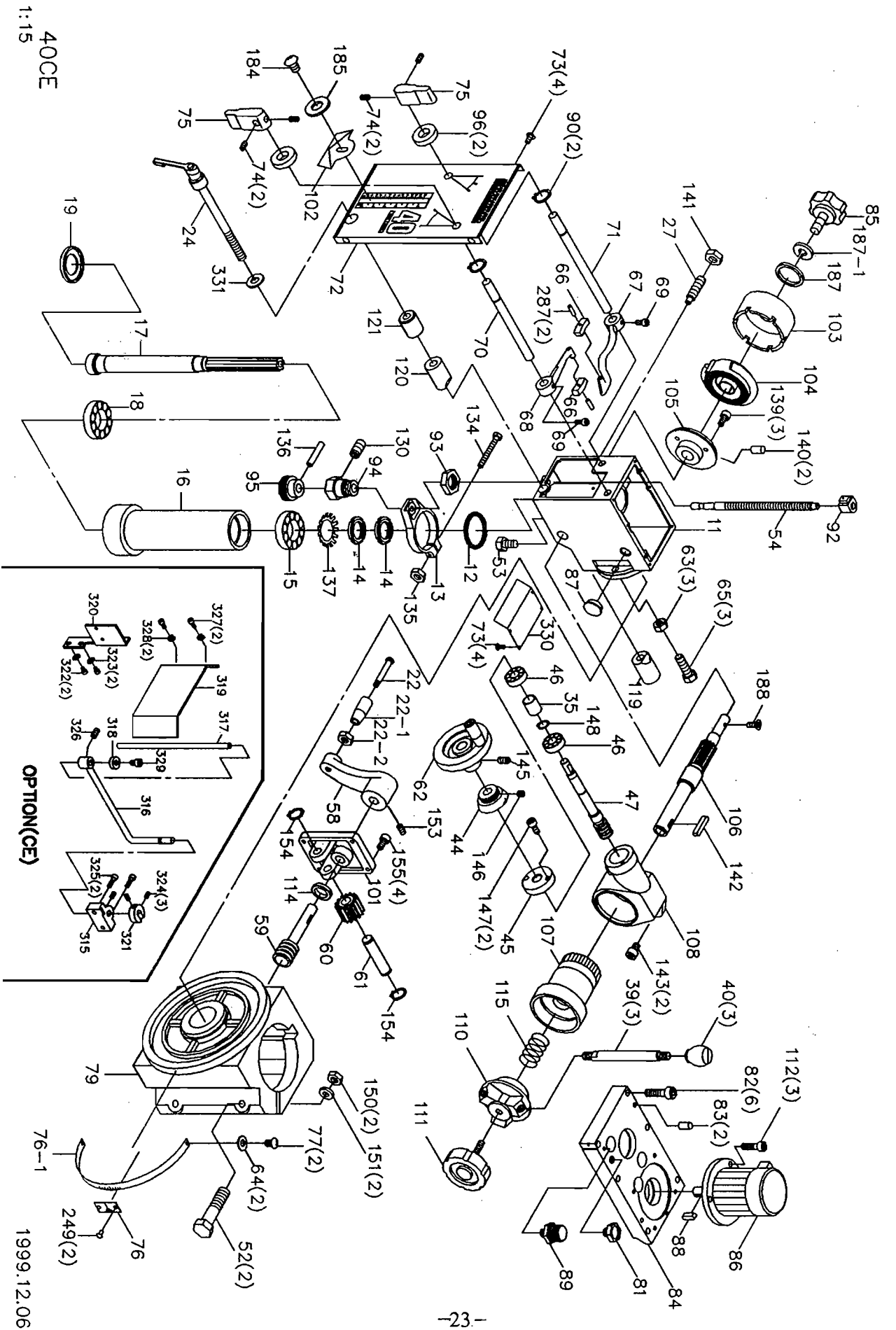
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1998.01.19

**MODEL 40HS / 40HC  
GEAR SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
1	2401001-2	Main Shaft Cover		1
2	6101	Chuck Arbor Bolt	MT3 M10xP1.5	1
2	6101-1	Chuck Arbor Bolt	MT3 M12xP1.75	1
2	6101-2	Chuck Arbor Bolt	MT3 W3/8"-16	1
2	6101-3	Chuck Arbor Bolt	MT3 M12xP1.75	1
2	6101-4	Chuck Arbor Bolt	R8 W7/16"-20	1
2	6101-5	Chuck Arbor Bolt	NT30 M12xP1.75	1
4	C008	C-Retaniner Ring	R68	1
5	CA6008ZZ	Ball Bearing (6008ZZ)	6008ZZ	2
6	2401006	Idle Gear		1
6-1	C115	C-Retaniner Ring	S40	1
7		Oil Seal	φ 35x φ 45x8t	1
8	2401008	Oil Seal Ring		1
9		Dust Cover	φ 35	2
10	C003	C-Retaniner Ring	R35	2
20	2401020	Pinion Shaft		1
21	2401021	Idle Gear		1
23	C109	C-Retaniner Ring	S22	1
28		Oil Seal	φ 40x φ 60x10t	1
29	2401029	Idle Gear		1
29	2401030	Idle Gear		1
30		Steel Ball/spring	φ 5/16" , φ 0.8x7L	3
31	2401031	Pinion Shaft		1
32	K017	Key	6x6x50L	1
32-1	K018	Key	6x6x75L	1
33	C106	C-Retaniner Ring	S18	1
34	2401055	Idle Gear		1
37	2401037	Idle Gear		1
37	2401027	Idle Gear		1
38	K014	Key	6x6x10L	1
41	CA6002ZZ	Ball Bearing (6002ZZ)	6002ZZ	5
42	C007	C-Retaniner Ring	R62	1
43	2401043	Pinion Shaft		1
48	K013	Key	5x5x80L	1
49	2401049	Idle Gear		1
49	2401051	Idle Gear		1
49	2401051A	Idle Gear		1
50		Oil Seal	φ 35x φ 62x8t	1
51	CA6007ZZ	Ball Bearing (6007ZZ)	6007ZZ	1
300	S441	Hex. Socket Head Screw	M4x0.7Px6L	2
301	W211	Spring Washer(For CE Only)	M4	2
302	2401192	Bushing		1





40CE  
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1999.12.06

**MODEL 40HS / 40HC  
HEAD SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
11	2401011	Head Body		1
12	6112	Rubber Flange		1
13	6513	Feed Base		1
14	6114	Bearing Nut	φ 29.5-20 x 5.5t	2
15	CA30206J	Taper Roller Bearing (30206J)	30206J	1
16	6116-2	Rack Sleeve	MT3	1
16	6116-3	Rack Sleeve	MT3 Hardened	1
16	6116-4	Rack Sleeve	MT3 Special	1
16	6116-5	Rack Sleeve	MT3 H. & S.	1
16	6116-6	Rack Sleeve	R8	1
17	6117	Spindle Shaft	MT3	1
17	6117-2	Spindle Shaft	R8	1
17	6117-3	Spindle Shaft	NT30	1
17	6117-4	Spindle Shaft	R8	1
17	6117-6	Spindle Shaft	R8 Hardened	1
17	2401017B	Spindle Shaft	MT4 Hardened	1
18	CA30207J	Taper Roller Bearing (30207J)	30207J	1
19	6119	Bearing Cap	MT3 R8	1
22	6581	Leaf Screw	5/16"-18	1
22-1	6580	Handle	(Black)	1
22-2	N007	Hex. Nut	W5-16"-18	1
24	2421003	Handle Rod		1
27	6127	Screw Key	3/8"-16UNC-38L	1
35	6135	Bearing Spacer	φ 34x φ 27.5x30L	1
39	6139	Handle Rod		3
40	290086	Plastic Round Knob	6-1-PF64	3
44	6144	Micro Adjusting Indicator	Metric 0~2.25	1
44	6144-1	Micro Adjusting Indicator	Inch 0~0.09	1
45	6145	Worm Cover	FC	1
46	CA6202Z	Bearing	6202Z	2
47	6147	Worm Shaft		1
52	S024	Head Body Fix Bolt	5/8"-12UNCx5-1/2"L	2
53		Oil Plug	1/4PT	1
54	6554	Graduated Rod	TW12-10-2A	1
58	6158	Head Handle		2
59	6559	Worm Shaft		1
59	6559-F	Worm Shaft		1
60	6160	Worm Gear		1
61	6561	Worm Gear Shaft		1
62	6142-2	Head Wheel		1
63		Hex. Nut	5/8"-11UNC	3

**MODEL 40HS / 40HC  
HEAD SYSTEM PARTS**

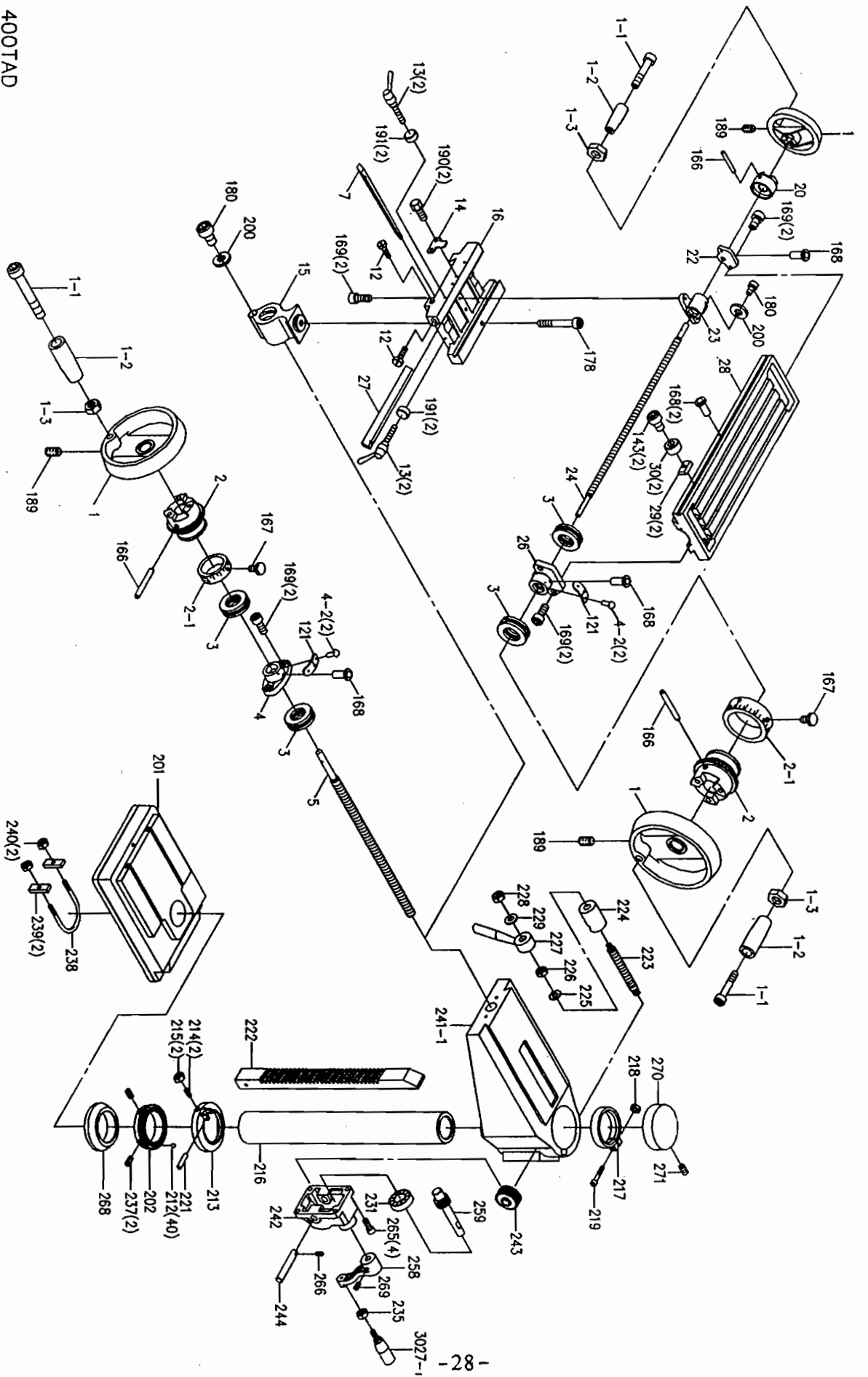
CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
64		Washer		2
65		Bolt	5/8"-11UNCx2-1/4"L	3
66	2401066	Gear Lever Bracket		2
67	2401067	Gear Lever (Left)		1
68	2401068	Gear Lever (Right)		1
69		Cross Round Head Screw	1/4"-20UNCx1/2"L	2
70	2401070	Lever Shaft (Right)		1
71	2401071	Lever Shaft (Left)		1
72	2401072	Name Plate		1
73		Cross Round Head Screw	3/16"-24UNCx3/8"L	8
74		Hex. Socket Headless Screw	1/4"-20UNCx1/4"L	8
75	2401075	Speed Lever		2
76		Degree-Meter		1
76-1	2401076-1	Degree-Meter		1
76-1	2401076	Degree-Meter		1
77		Cross Round Head Screw		2
79	2412001	Toraise And Lower Body		1
81		Oil Plug	PT3/8"x2"L	1
82		Hex. Socket Head Screw	3/8"-16UNCx1-3/4"L	6
83		Miter Pin	ϕ 3/8"x2"L	2
84	2401084	Head Body Cover		1
85	6185	Plum Screw	1/4"-20UNC	1
86		Motor		1
87		Fluid Lever Indicator	ϕ 29	1
88		Key	6x6x30L	1
89		Vent Plug Screw	PT1/8"x90°	1
90		C Ring	S12	2
92	6192	Set Position Block		1
93	6193	Hex. Socket Headless Screw		1
94	6194	Screw Support		1
95	6195	Knob		1
96		Oil Seal	G12	2
101	61101	Head Raise Bracket		1
102	61102	Limit Plate		1
103	61103	Spring Cover		1
104	61104	Spring		1
105	61105	Spring Base		1
106	61106	Pinion Shaft		1
107	61107	Worm Gear		1
108	61108	Feed Cover		1
110	61110	Handle Base		1

**MODEL 40HS / 40HC  
HEAD SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
111	6138	Lock Bolt With Knob		1
112		Hex. Socket Head Screw	3/8"-16UNCx1"L	3
114	61114	<b>Bushing</b>		1
115	61115	Spring		1
119	6126A	Fixed Tight Collar (Thread)		1
120	6125A	Head Lock		1
121	6125-2	Fixed Tight Collar		1
130		Pin	M4x8L	1
134		Hexagon Head Bolt	1/4"x2"L	1
135		Hex. Nut	1/4"	1
136		Spring Pin		1
137		Star Washer	AW06 $\phi$ 30	1
139		Cross Round Head Screw	3/16"x3/4"L	3
140		Spring Pin	$\phi$ 3x12L	2
141		Hexagon Nut	3/8"	1
142		Key	7x7x20L	1
143		Hex. Socket Head Screw	5/16"x1/2"L	2
145		Hex. Socker Headless Screw	5/16"x5/16"L	1
146		Hex. Socket Headless Screw	1/4"x1/4"L	1
147		Hex. Socket Head Screw	3/16"x7/16"L	2
148		C-Retainer ring	S15	1
150		Hex. Nut	5/8"-12UNC	2
151		Washer	5/8"	2
153		Hex. Socket Headless Screw	5/16"x5/16"L	1
154		C-Retainer ring	S14	2
155		Hex. Socket Head Screw	1/4"x1"L	4
184		Cross Round Head Screw	5/32"x1/4"L	1
185		Washer	5/32"	1
187		Washer	1/4"	1
187-1		Spring Washer	1/4"x1"x1.5t	1
188		Flat Cross Head Screw	3/16"x3/8"L	1
249		Rivet	$\phi$ 2	2
287		Pin		2
330	2401085	Cover Flake		1
331		Washer	1/2"x7/8"x2t	1
	2401086	Drilling Drawing for Electrical Cover (under)		1
	61202	Drilling Drawing for Electrical Cover (upper)		1
	2401088	Drilling Drawing for Electrical Cover (under)		1
	6631			1

**MODEL 40HS / 40HC  
OPTION (CE) PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
315	61191-1	Rotary Supporting Base(For CE Only)		1
316	61192-1	Rotary Shaft(For CE Only)		1
317	61193-1	Chuck Guard Supporting Rod(For CE Only)		1
318	61193-2	Washer(For CE Only)		1
319	61194-1	Chuck Guard(For CE Only)		1
320	61195	Cutter Switch Base(For CE Only)		1
321	61196	Control Block(For CE Only)		1
322	S446	Hex. Socket Head Screw	M5x8L	2
323		Washer	M5	2
324	S614	Hex. Socket Headless Screw	M5x10L	3
325	S461	Hex. Socket Head Screw	M8x25L	2
326		Plum Screw	M6x12L	1
327	S443	Hex. Socket Head Screw	M5x16L	2
328		Spring Washer(For CE Only)	M5	2
329	S441	Hex. Socket Head Screw	M4x6L	1



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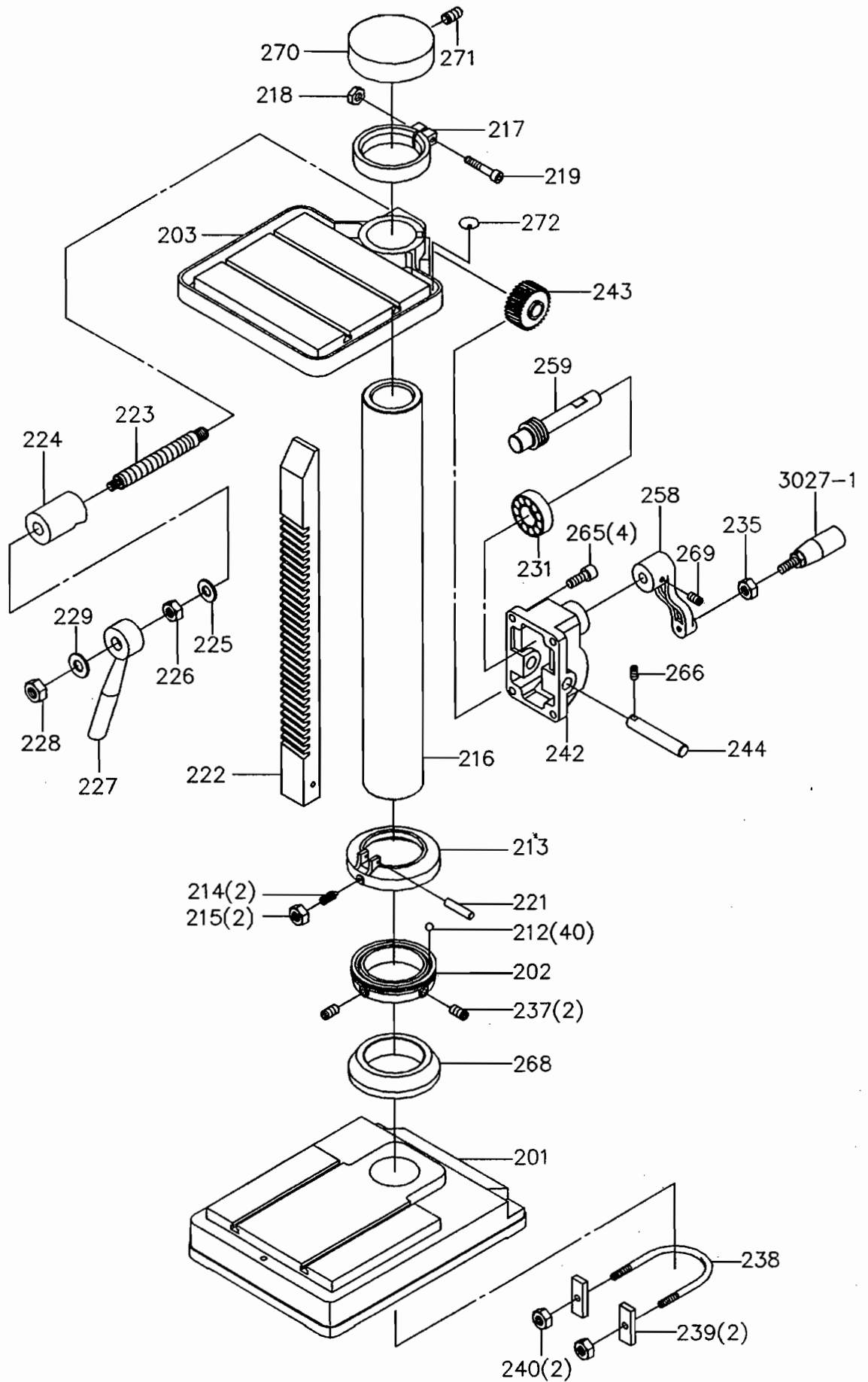
**MODEL 40HS / 40S2F**  
**CROSS TABLE SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
1	6601	Table Handle Wheel	§ 17	3
1-1	S413	Hex. Socket Head Screw	3/8"-16UNCx3-1/2"L	3
1-2	3027-1	Handle Bar		3
1-3	N005	Hexagon Nut	3/8"	3
2	6602	Dial Clutch	§ 17	2
2-1	6602-1	Graduated Dial(Metric)		2
2-1	6602-2	Graduated Dial(Imperial)		2
2-1	6602-4	Graduated Dial(Metric)		2
3	CA51103	Thrust Bearing	51103	4
4	7204	Square Flange	§ 17	1
4-2		Rivet	§ 2	4
5	7205	Table Screw	TM23.5xP2.5	1
5	7205-1	Table Screw	TM23.5-10	1
7	7207	Gib Strip		1
12	6212	Gib Strip Bolt		2
13	6213	Leaf Screw		4
13	6213-1	Leaf Screw		4
13	6213-2	Leaf Screw		4
13	6151-1	T Screw		4
14	6214	Movable Fixed Block		1
15	6215	Table Base Nut	TM23.7xP2.5	1
15	6215-1	Table Base Nut	TM23.7-10	1
16	12216	Center Base		1
20	7620	Table Clutch	§ 17	1
22	7222	Left Flange		1
23	6223	Table Nut	TM23.7xP2.5	1
23	6223-1	Table Nut	TM23.7-10	1
23	6223-2	Table Nut	TM24xP5	1
24	7224	Table Screw	TM23.5xP2.5	1
24	7224-1	Table Screw	TM23.5-10	1
26	7226	Right Flange		1
27	7227	Gib Strip		1
28	12228	Table		1
29	6229	Fixed Block		2
30	6230	Movable Fixed Ring		2
121	61121	Limit Plate		2
143	S415	Hex. Socket Head Screw	5/16"x1/2"L	2
166		Spring Pin	§ 5x40L	3
167	6602-3	Link Screw		2
168		Oil Ball	3/16"	5
169	S414	Hex. Socket Head Screw	5/16"x1"L	8
178	S419	Hex. Socket Head Screw	5/16"x3/4"L	1

**MODEL 40HS / 40S2F****CROSS TABLE SYSTEM PARTS**

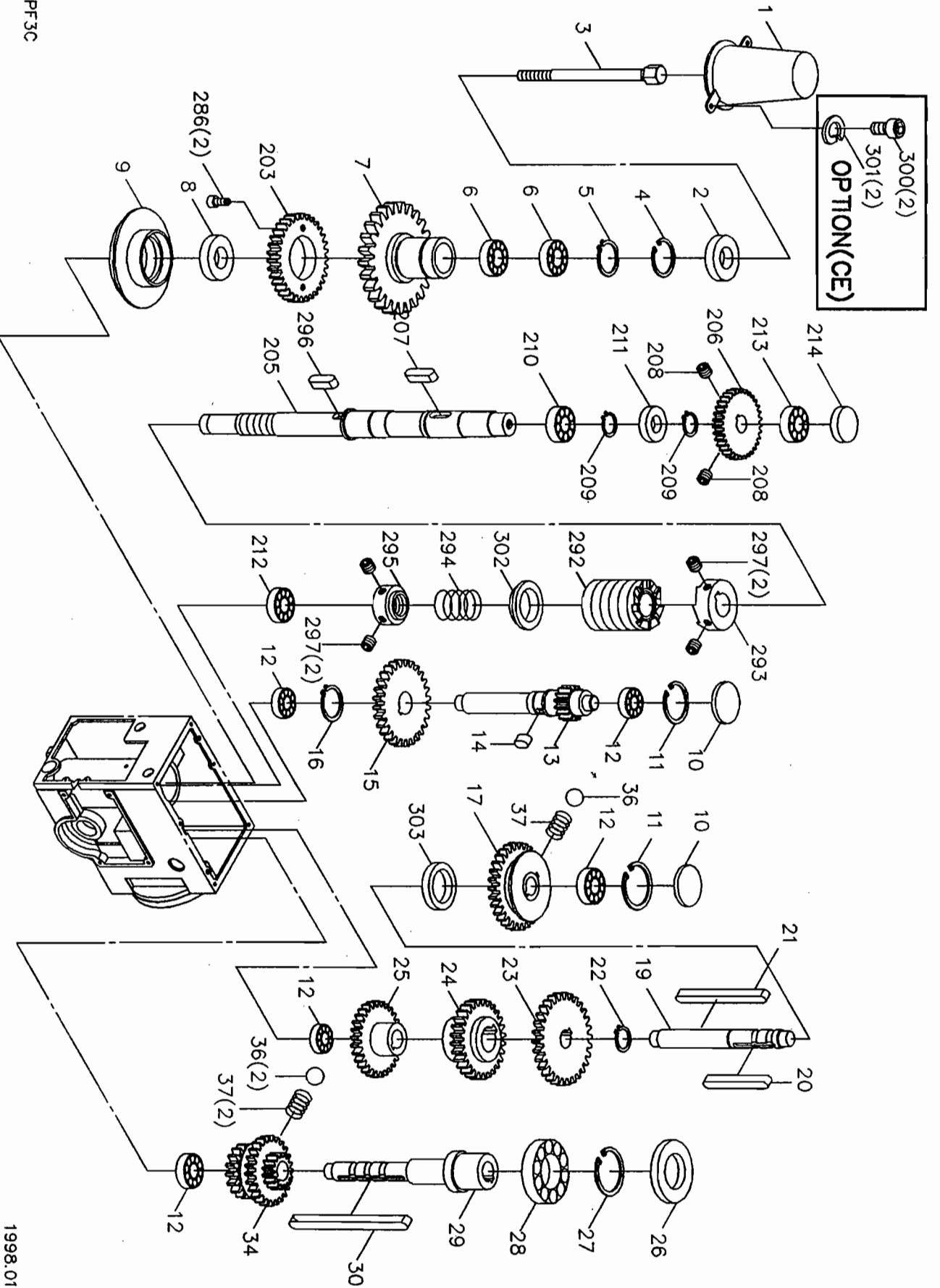
CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
180	S445	Hex. Socket Head Screw	M5x6L	2
189	S602	Hex. Socket Headless Screw	1/4"-20UNC	3
190	S018	Hex. Head Screw	5/16"x1/2"L	2
191	6630	Bushing		1
201	623306	Bed		1
202	62202	Bearing Cover (Lower)		1
212		Steel Ball	3/8"	40
213	62213	Bearing Cover		1
214	62214	Fixed Screw		2
215	N007	Screw Bolt	5/16"	2
216	62216	Column Base		1
217	62217	Collar		1
218	N005	Nut	3/8"	1
219	S412	Hex. Socket Head Screw	3/8"x2-1/4"L	1
221	P022	Pin	5x40L	1
222	62222	Rack		1
223	62223	Lock Bolt		1
224	62224-1	Lock Block		1
225	W019	Washer	5/8"	1
226	N008	Nut	5/8"	1
227	623061	Lock Handle		1
228	N005	Nut	3/8"	1
229	W008	Washer	3/8"	1
231	CA51103	Thrust Bearing	51103	1
235	N005	Nut	3/8"	1
237	S604	Hex. Socker Headless Screw	1/4"x3/8"L	2
238	62238	"U" Bolt		1
239	62239	Fixed Block		2
240	N001	Nut	1/2"	2
241-1	62241-1	Base		1
242	62242	Pu-Down With Stand		1
243	62243	Worm Gear		1
244	62244	Worm Wheel Shaft		1
258	6158	Up-Down Handle		1
259	62259	Worm Shaft		1
265	S414	Hex. Socket Head Screw	5/16"x1"L	4
266	S604	Hex. Socker Headless Screw	1/4"x3/8"L	1
268	62268	Bushing Bracket		1
269	S610	Hex. Socker Headless Screw	5/16"x5/16"L	1
270	6611	Column Head		1
271	S610	Hex. Socker Headless Screw	5/16"x5/16"L	1
3027-1	3027-1	Handle		1





**MODEL 40HC / 40C2F**  
**SQUARE TABLE SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
201	623306	Bed		1
202	62202	Bearing Cover (Lower)		1
203	623305	Square Working Table		1
212		Steel Ball	3/8"	40
213	62213	Bearing Cover		1
214	62214	Fixed Screw		2
215	N007	Screw Bolt	5/16"	2
216	62216	Column Base		1
217	62217	Collar		1
218	N005	Nut	3/8"	1
219	S412	Hex. Socket Head Screw	3/8"x2-1/4"L	1
221	P013	Pin	Ø 5x40L	1
222	62222	Rack		1
223	62223	Lock Bolt		1
224	62224-1	Lock Block		1
225	W019	Washer	5/8"	1
226	N008	Nut	5/8"	1
227	623061	Lock Handle		1
228	N005	Nut	3/8"	1
229	W011	Washer	3/8"	1
231	CA51103	Thrust Bearing	51103	1
235	N005	Nut	3/8"	1
237	S604	Hex. Socket Headless Screw	1/4"x3/8"L	2
238	62238	"U" Bolt		1
239	62239	Fixed Block		2
240	N001	Nut	1/2"	2
242	62242	Pu-Down With Stand		1
243	62243	Worm Gear		1
244	62244	Worm Wheel Shaft		1
258	6158	Up-Down Handle		1
259	62259	Worm Shaft		1
265	S414	Hex. Socket Head Screw	5/16"x1"L	4
266	S604	Hex. Socket Headless Screw	1/4"x3/8"L	1
268	62268	Bushing Bracket		1
269	S610	Hex. Socket Headless Screw	5/16"x5/16"L	1
270	6611	Column Head		1
271	S610	Hex. Socket Headless Screw	5/16"x5/16"L	1
272	S610	Filter		1
3027-1	3027-1	Handle		1



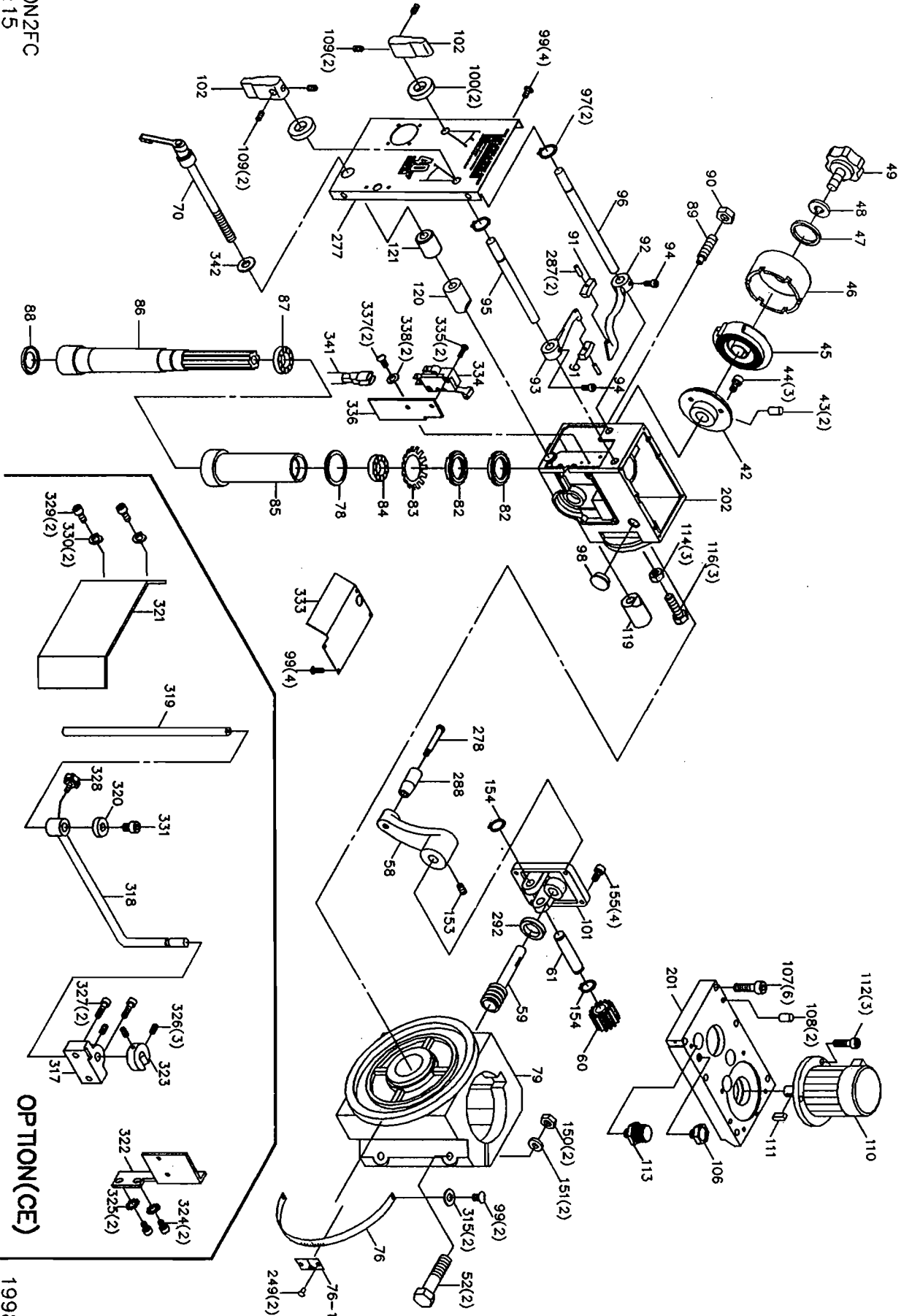
**MODEL 40S2F / 40C2F  
GEAR SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
1	2401001-2	Main Shaft Cover		1
2		Oil Seal	§ 40x § 60x10t	1
3	6101	Chuck Arbor Bolt	MT3 M10xP1.5	1
3	6101-2	Chuck Arbor Bolt	R8 W3/8"-16	1
3	6101-4	Chuck Arbor Bolt	R8 7/16"-20	1
3	6101A	Chuck Arbor Bolt	MT4	1
4	C008	C-Retainer Ring	R68	1
5	C115	C-Retainer Ring	S40	1
6	CA6008ZZ	Ball Bearing (6008ZZ)	6008ZZ	2
7	2401006	Idle Gear		1
8		Oil Seal	§ 35x § 45x8t	1
9	2401008	Oil Seal Ring		1
10		Dust Cover	§ 35	2
11	C003	C-Retainer Ring	R35	2
12	CA6002ZZ	Ball Bearing (6002ZZ)	6002ZZ	5
13	2401020	Pinion Shaft		1
14	K014	Key	6x6x10L	1
15	2401021	Idle Gear		1
16	C109	C-Retainer Ring	S22	
17	2401029	Idle Gear		1
17	2401030	Idle Gear		1
19	2401031	Pinion Shaft		1
20	K017	Key	6x6x50L	1
21	K018	Key	6x6x75L	1
22	C106	C-Retainer Ring	S18	1
23	2401055	Idle Gear		1
24	2401037	Idle Gear		1
25	2401027	Idle Gear		1
26		Oil Seal	§ 35x § 62x8t	1
27	C007	C-Retainer Ring	R62	1
28	CA6007ZZ	Ball Bearing (6007ZZ)	6007ZZ	1
29	2401043	Pinion Shaft		1
30	K013	Key	5x5x80L	1
34	2401049	Idle Gear		1
34	2401051	Idle Gear		1
34	2401051A	Idle Gear		1
36		Steel Ball	§ 5/16"	3
37		Spring	§ 0.8x7L	3
203	2450003	Idle Gear		1
205	2450004	Transmission Worm		1

**MODEL 40S2F / 40C2F  
GEAR SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
206	2450005	Idle Gear		1
207	K004	Key	5x5x16L	1
208	S620	Hex. Socket Headless Screw	M6x6L	2
209	C105	C-Retainer Ring	S17	2
210	CA6003ZZ	Bearing	6003ZZ	1
211		Oil Seal	ϕ 35x ϕ 17x8t	1
212	CA6001ZZ	Ball Bearing (6001ZZ)	6001ZZ	1
213	CA6202ZZ	Ball Bearing (6202ZZ)	6202ZZ	1
214		Oil Seal Cover	ϕ 35	1
286	S442	Hex. Socket Head Screw	M5x12L	2
292	2450052	Worm Shaft		1
293	2450053	Clutch Block		1
294	2450054	Spring		1
295	2450055	Adjustable Bolt		1
296	K002	Key	5x5x10L	1
297	S615	Hex. Socket Headless Screw	M5x5L	4
300	S441	Hex. Socket Head Screw	M4x0.7Px6L	2
301	W221	Spring Washer(For CE Only)	M4	2
302	2450057	Washer		1
303	2401192	Bushing		1

40N2FC  
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OPTON(CE)

1998.12.03

**MODEL 40S2F / 40C2F  
HEAD SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
42	61105	Spring Base		1
43	P202	Spring Pin	ϕ 3x12L	2
44		Cross Round Head Screw	3/16"x3/4"L	3
45	61104	Spring		1
46	61103	Spring Cover		1
47	W006	Washer	1/4"	1
48	W202	Spring Washer	1/4"x1"x1.5t	1
49	6185	Plum Screw	1/4"-20UNC	1
52		Head Body Fix Bolt	5/8"-12UNCx5-1/2"L	2
58	6158	Up-Down Handle		1
59	6559	Worm Shaft		1
59	6559-F	Worm Shaft		1
60	6160	Worm Gear		1
61	6561	Worm Gear Shaft	ϕ 9/16"x64.3L	1
70	2421003	Handle Rod		1
76	2401076-1	Degree-Meter		1
76	2401076	Degree-Meter		1
76-1	2450060	Scale		3
78	6112	Rubber Flange		1
79	2412001	Toraise And Lower Body		1
82	6114	Bearing Nut	ϕ 29.5-20x5.5t	2
83		Star Washer	AW06 ϕ 30	1
84	CA30206J	Taper Roller Bearing (30206J)	30206J	1
85	6116-2	Rack Sleeve	MT3	1
85	6116-3	Rack Sleeve	MT3 Hardened	1
85	6116-4	Rack Sleeve	MT3 Special	1
85	6116-5	Rack Sleeve	MT3 H. & S.	1
85	6116-6	Rack Sleeve	MT3	1
86	6117	Spindle Shaft	MT3	1
86	6117-2	Spindle Shaft	R8	1
86	6117-3	Spindle Shaft	NT30	1
86	6117-4	Spindle Shaft	R8	1
86	6117-6	Spindle Shaft	R8 Hardened	1
87	CA30207J	Taper Roller Bearing (30207J)	30207J	1
88	6119	Bearing Cap	MT3 R8	1
89	6127	Screw Key	3/8"-16UNC-38L	1
90	N005	Hexagon Nut	3/8"	1
91	2401066	Gear Lever Bracket		2
92	2401067	Gear Lever (Left)		1
93	2401068	Gear Lever (Right)		1

**MODEL 40S2F / 40C2F  
HEAD SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
94	S701	Cross Round Head Screw	1/4"-20UNCx1/2"L	2
95	2401070	Lever Shaft (Right)		1
96	2401071	Lever Shaft (Left)		1
97	C101	C Ring	S12	2
98		Fluid Lever Indicator	ϕ 29	1
99	S708	Cross Round Head Screw	3/16"-24UNCx3/8"L	10
100		Oil Seal	G12	2
101	61101	Head Raise Bracket		1
102	2401075	Speed Lever		2
106		Oil Plug	PT3/8"x2"L	1
107	S411	Hex. Socket Head Screw	3/8"-16UNCx1-3/4"L	6
108		Miter Pin	ϕ 3/8"x2"L	2
109	S602	Hex. Socket Headless Screw	1/4"-20UNCx1/4"L	4
110		Motor		1
111	K016	Key	6x6x30L	1
112	S409	Hex. Socket Head Screw	3/8"-16UNCx1"L	3
113		Vent Plug Screw	PT1/8"x90°	1
114	N009	Hex. Nut	5/8"-11UNC	3
116	S024	Bolt	5/8"-11UNCx2-1/4"L	3
119	6126A	Fixed Tight Collar (Thread)		1
120	6125A	Head Lock		1
121	6125-2	Fixed Tight Collar		1
150	N008	Hex. Nut	5/8"-12UNC	2
151	W019	Washer	5/8"	2
153	S610	Hex. Socker Headless Screw	5/16"x5/16"L	1
154	C102	C-Retainer Ring	S14	2
155	S401	Hex. Socket Head Screw	1/4"x1"L	4
201	2450001	Head Body Cover		1
202	2450002	Head Body		1
249		Rivet	ϕ 2x4L	8
277	2450056	Name Plate		1
277	2450056A	Name Plate		1
278	2450050	Handle Bar Screw		1
287		Spring Pin		2
288	6580	Handle Bar		1
292	61114	Miter Pin(For CE Only)	M6x50L (1:48)	1
315	W018	Flat Washer	3/16"	2
333	2450069	Dust Plate		1
334	ET0602	Micro Switch	V-15FL2-1B	1
335		Cross Round Head Screw	M3x15L	2



**MODEL 40S2F / 40C2F  
HEAD SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
336	2450064	Safety Switch Base		1
337		Cross Round Head Screw	3/16"x3/8"L	2
338		Flat Washer	3/16"	2
341		Control Line		1

**MODEL 40S2F / 40C2F  
OPTION (CE) PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
317	61191-1	Rotary Supporting Base(For CE Only)		1
318	61192-1	Rotary Shaft(For CE Only)		1
319	61193-1	Chuck Guard Supporting Rod(For CE Only)		1
320	61193-2	Washer(For CE Only)		1
321	61194-1	Chuck Guard(For CE Only)		1
322	61195	Cutter Switch Base(For CE Only)		1
323	61196	Control Block(For CE Only)		1
324	S446	Hex. Socket Head Screw	M5x8L	2
325		Washer	M5	2
326	S614	Hex. Socket Headless Screw	M5x10L	3
327	S461	Hex. Socket Head Screw	M8x25L	2
328		Hex. Socket Headless Screw(For CE O	M6x12L	1
329	S443	Hex. Socket Head Screw	M5x16L	2
330	W212	Spring Washer	M5	2
331	S441	Hex. Socket Head Screw	M4x6L	1

## **POWER DOWN FEED OPERATION:**

1. First, check the proper feed speed for the object and the cutter.
2. By adjusting the shift dial "A" (see Fig.2), You can obtain the speed you need. The shift dial can be operated during the machine running or when the machine is stopped by turning it on clockwise or counter-clockwise.
3. Adjust the proper distance between the object and the cutter and the feeding depth needed. When adjusting the feeding depth, first release the dial fix-nut "B" (see Fig.2) and turn the indicating ring "C" to the depth needed. Then reset "B" tightly again.
4. Start the machine and push out the handle rod "F" (see Fig.2), then the spindle will feed down automatically until the end of stroke you set. It will go back automatically at the end of stroke.
5. If you want to set micro-adjustment, you should turn the shift dial "E" to "0" at first.

**CAUTION :** The maximum spindle spindle for power down feed is 107 mm only.  
When spindle power down feed motion is released, spindle will return automatically. Please watch out the handle rod turning.

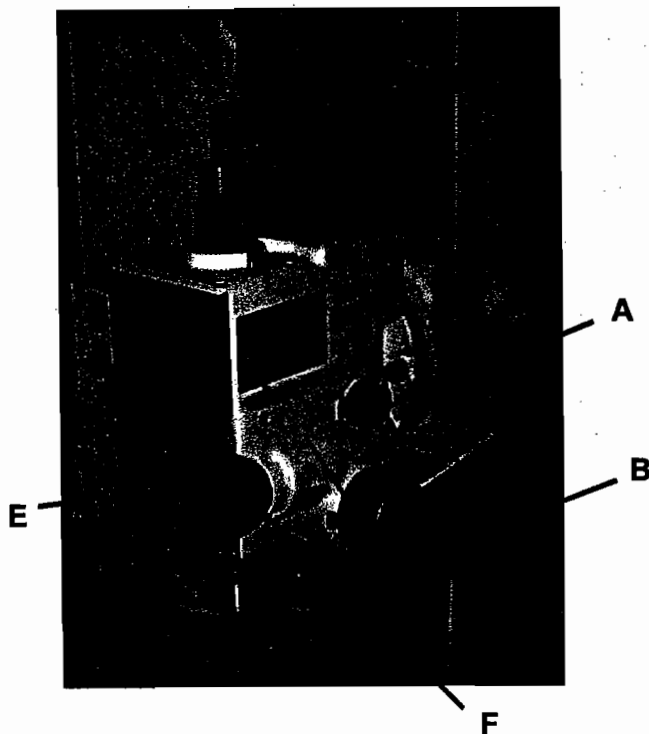
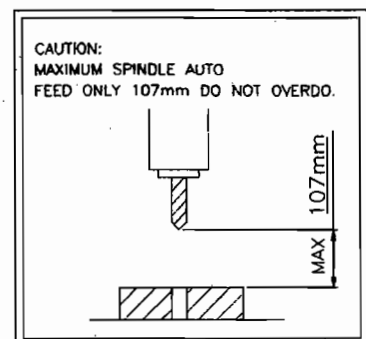
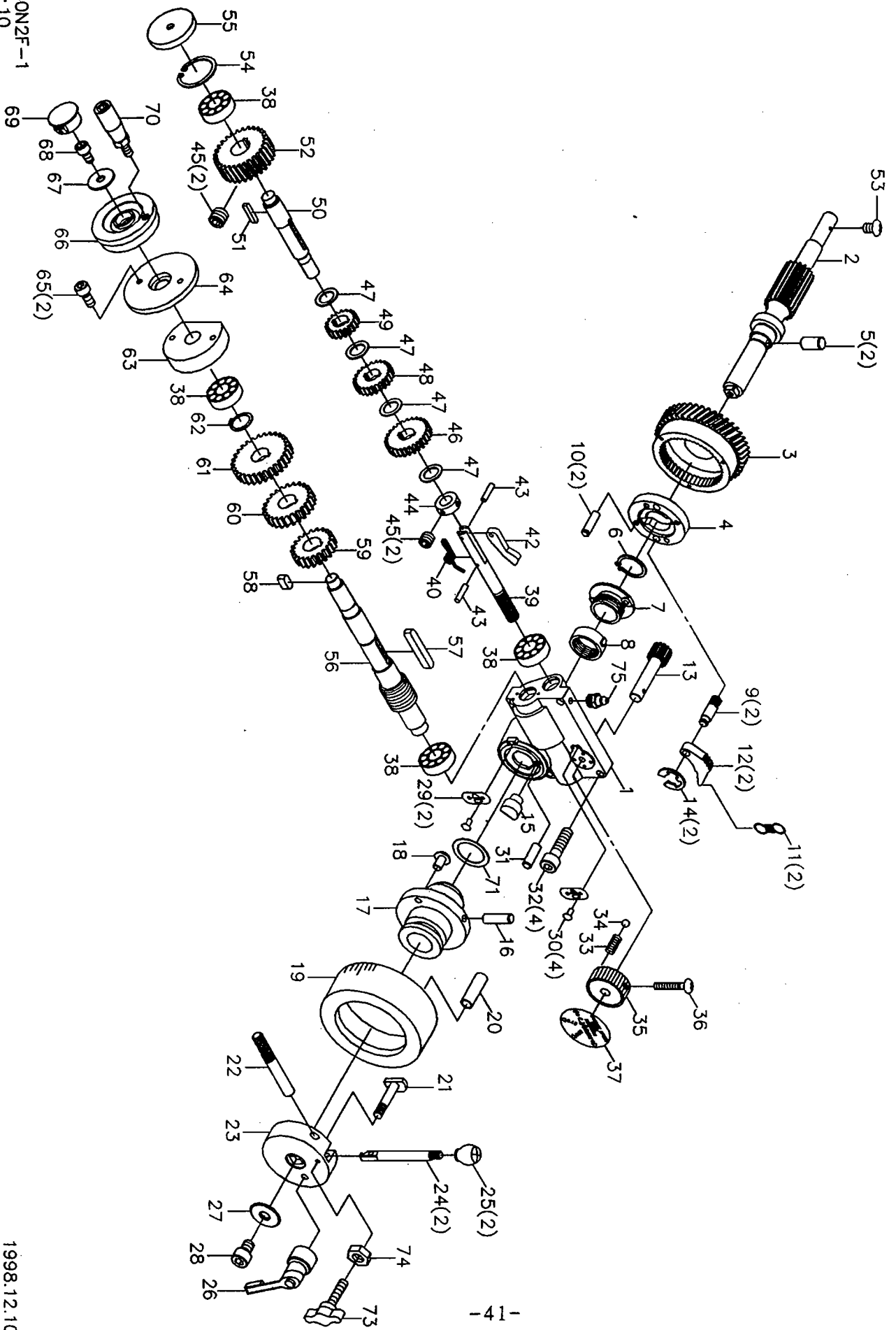


Fig. 2



40N2F-1  
1:10



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**MODEL 40S2F / 40C2F**  
**POWER FEED SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
1	2450068	Gear Box		1
2	2450086A	Pinion Shaft		1
3	2450023	Transmission Gear		1
4	2450024	Clutch Key Base		1
5	2450022	Key		2
6	C110	C Ring	S25	1
7	2450096	Cluth Screw		1
8	2450095	Cluth Nut		1
9	2450097	Clutch Key Pin		2
10	2450027	Spring Pin		2
11	2450028	Spring		2
12	2450026	Clutch Key		2
13	2450081A	Gear Shaft		1
14	E004	E-Retainer Ring	E5	2
15	2450020	Release Block		1
16	2450030	Bushing Pin		1
17	2450087A	Clutch Bushing		1
18	2450031	Bushing Stop		1
19	2450032A	Scale Base	INCH	1
19	2450032B	Scale Base	METRIC	1
20		Pin	ϕ 5	1
21	2450033	Scale Base Set Screw		1
22	2450039	Handle Rod Pin		2
23	2450037	Handle Body		1
24	2450038	Handle Rod		2
25	290086	Plastic Round Knob		2
26	2450063	Graduated Base Fixed Grip		1
27		Washer		1
28	S457	Hex. Socket Head Screw	M8x12L	1
29	2450060	Scale		2
30		Rivet	ϕ 2x4L	4
31	2450051	Pin		1
32	S416	Hex. Socket Head Screw	5/16"x1-1/4"L	4
33	290089	Spring		1
34		Steel Ball	ϕ 8 or 5/16"	1
35	2450079	Speed Lever		1
36	S717	Cross Round Head Screw	M4x0.7x25L	1
37	2450059	Speed Scale	METRIC	1
37	2450059A	Speed Scale	INCH	1
38	CA6003ZZ	Bearing	6003ZZ	4

**MODEL 40S2F / 40C2F**  
**POWER FEED SYSTEM PARTS**

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY
39	2450082A	Change Gear Lever		1
40	2450084A	Spring Leaf		1
42	2450083A	Speed-Changing Key		1
43	P001	Pin	∅ 3x10L	1
44	2450089A	Bushing Bracket		1
45	S620	Hex. Socket Headless Screw	M6x6L	4
46	2450072A	Gear		1
47	2450074A	Washer		3
48	2450071A	Gear		1
49	2450070A	Gear		1
50	2450073A	Shaft		1
51	K007	Key	5x5x28L	1
52	2450008	Transmission Gear		1
53	S303	Flat Cross Head Screw	3/16"x3/8"L	1
54	C003	C Ring	R35	1
55	2450014	Cover		1
56	2450078A	Transmission Worm		1
57	K009	Key	5x5x32L	1
58	K001	Key	4x4x10L	1
59	2450075A	Gear		1
60	2450076A	Gear		1
61	2450077A	Gear		1
62	C107	C Ring	S19	1
63	2450085A	Spacer Ring		1
64	2450088A	Graduated Bottom Plate		1
65	S442	Hex. Socket Head Screw	M5x12L	2
66	2450047	Hand Wheel	METRIC	1
66	2450047D	Hand Wheel	INCH	1
67		Flat Washer	M6	1
68	S448	Hex. Socket Head Screw	M6x12L	1
69		Plug	7/8"	1
70		Hex. Nut	5/16"	1
71	2450100	Speed Handle Bar		1
73	2450098	T Screw	5/16"x3/4"L	1
74	N007	Hex. Nut	5/16"	1
75		Oil Seal		1