ARICAS

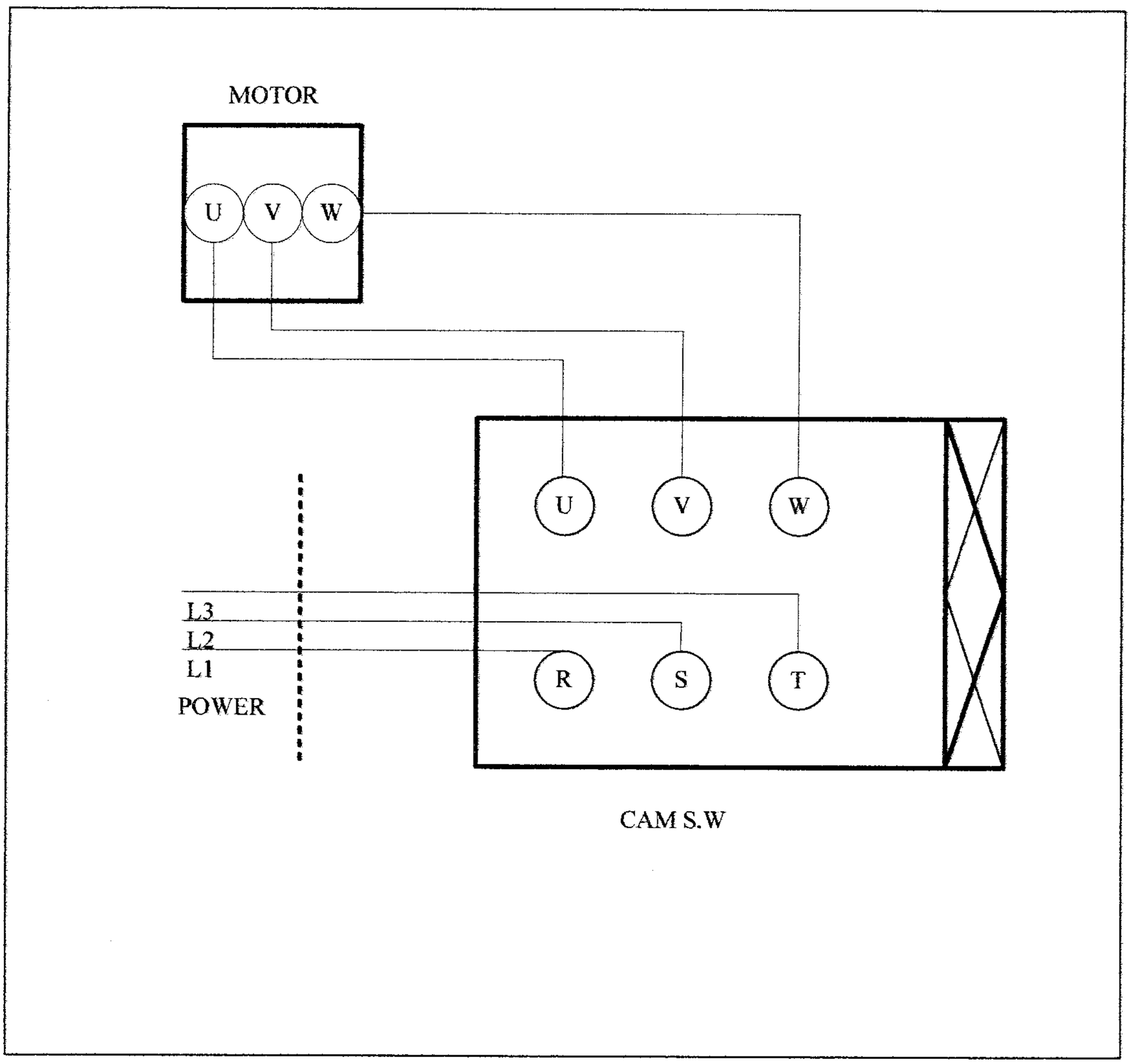
GEARED HEAD MILLING & DRILLING MACHING

OPERATION MANUAL
AND
PARTS LIST

MODEL :

GEM-400G	
GEM-400GD	
GEM-400GS	
GEM-400GCT	✓
GEM-450G	
GEM-500G Ⅱ	
GEM-500G Ⅲ	

CONTENT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V
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L2
L1
POWER
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CAM S.W

2. BEFORE OPERATION:

(a)FILL THE LUBRICANT.

(b)IN ORDER TO KIIP THE ACCURATE PRECISION, THE TABLE MUST BE FREE FROM DUST AND OIL DEPOSITS.

(c)MAKE SURE THAT THE TOOLS ARE CORRECTLY SET AND THE WORKPIECE IS SET FIRMLY.

(d)MAKE SURE THAT THE SPEED IS NOT SET TOO FAST.

(e)MAKE SURE THAT EVERYTHING IS READY BERFORE USE.

3. AFTER OPERATION:

(a)TURN OFF THE ELECTRLC SWITCH.

(b)TAKE OFF THE TOOLS.

(c)CLEAN THE MACHINE AND LUBRICATED WITH LUBRICANT.

4. ADJUSTMENT OF HEAD:

(a)TO RAISE AND LOWER THE HEAD, LOSEN THE TWO BOLTS SHOWN IN FIG.2. USE THE LEFT SIDE HEAD HANDLE TO RAISE AND LOWER THE HEAD ON ITS RACK AND PINION MECHANISM. WHEN THE DESIRED HEIGHT IS REACHED, TIGHTEN THE BOLTS TO AVOID VIBRATION.

(b)HEAD MAY BE ROTATED 90° BY LOSENING THE SAME BOLTS MENTIONED ABOVE. ADJUST THE HEAD TO THE DESIRED ANGLE, THEN FIX THE BOLT ACCORDING TO THE PROCESSING REQUIREMENT AND TIGHTEN TWO BOLTS AT THE SAME TIME TO FIX THE HEAD IF DRILLING & MILLING TOO MUCH.

(c)UNSCREW 3 NUTS WHILE THE WORKPIECE NEEDS TO BE BEVEL DRILLED. TURN TO THE DEGREES AS THE PROCESSING REQUIREMENT, THEN LOCK THE 3 NUTS.

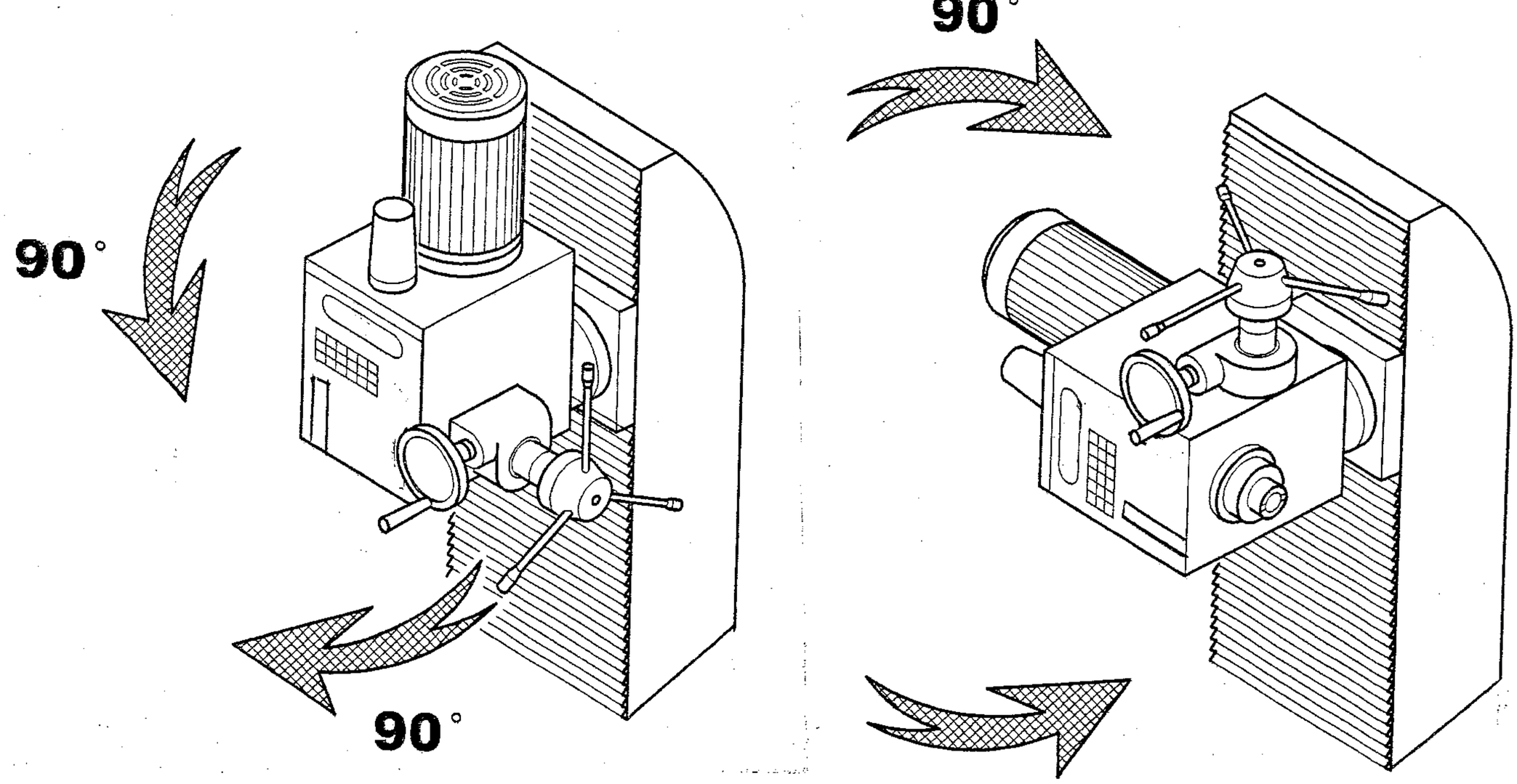
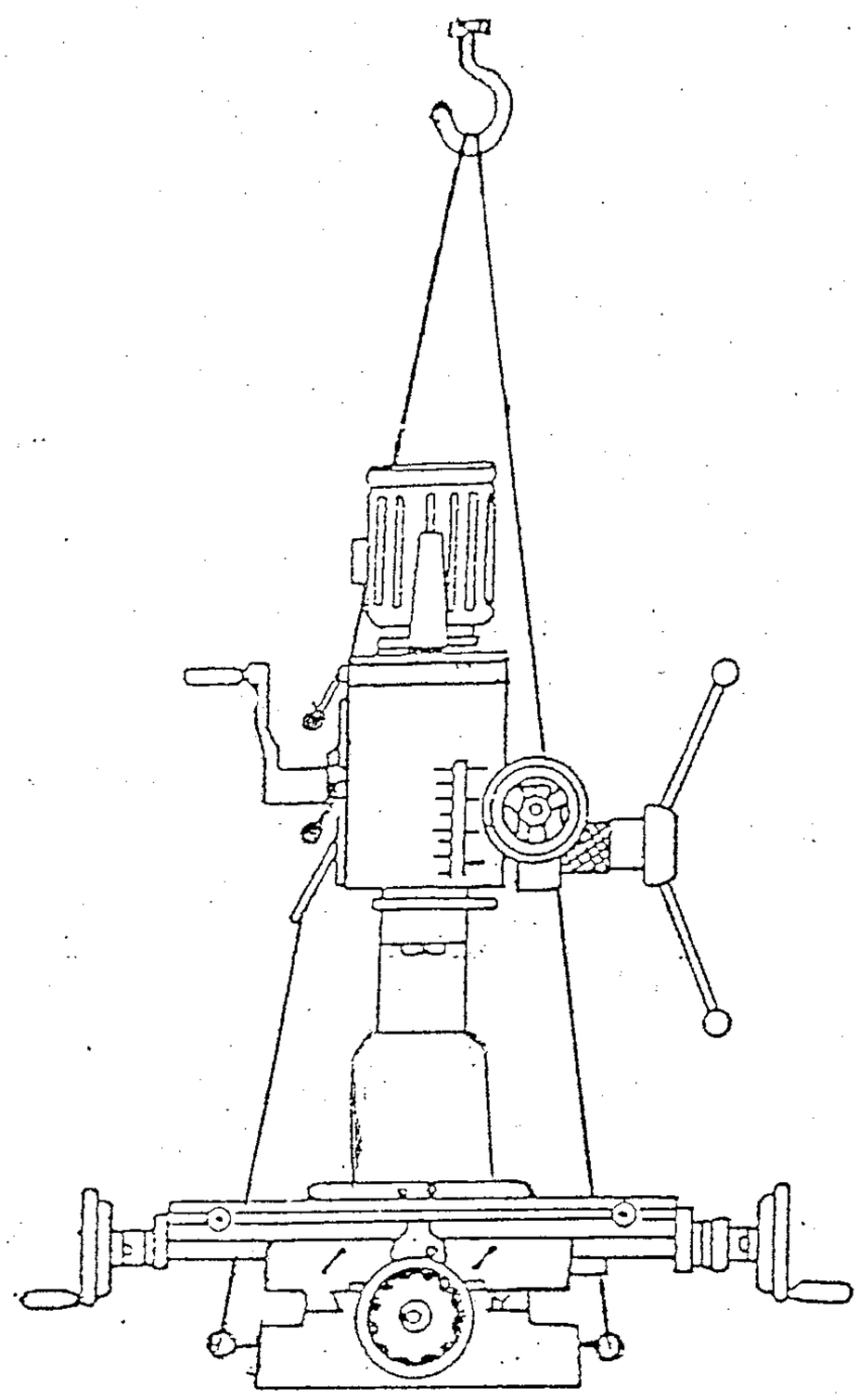


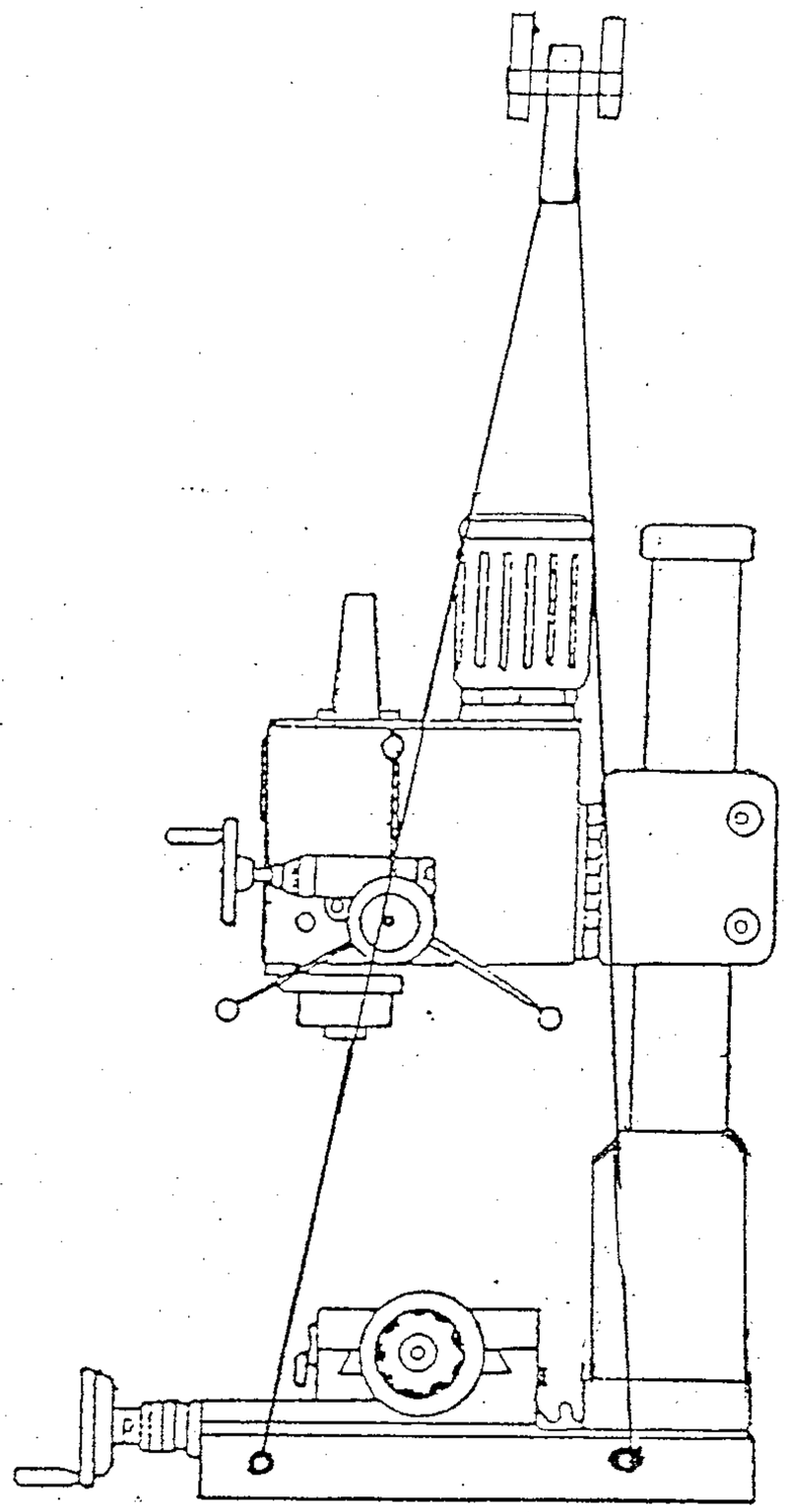
FIG 1

5. PREPARING DRILLING:

(a)MAKE THE FEED HANDLE AND THE WORM INNER GEAR UNCLUTCHING BY MOVING FEED HANDLE, THEN STOP DOWN FEED.

6.LIFTING:

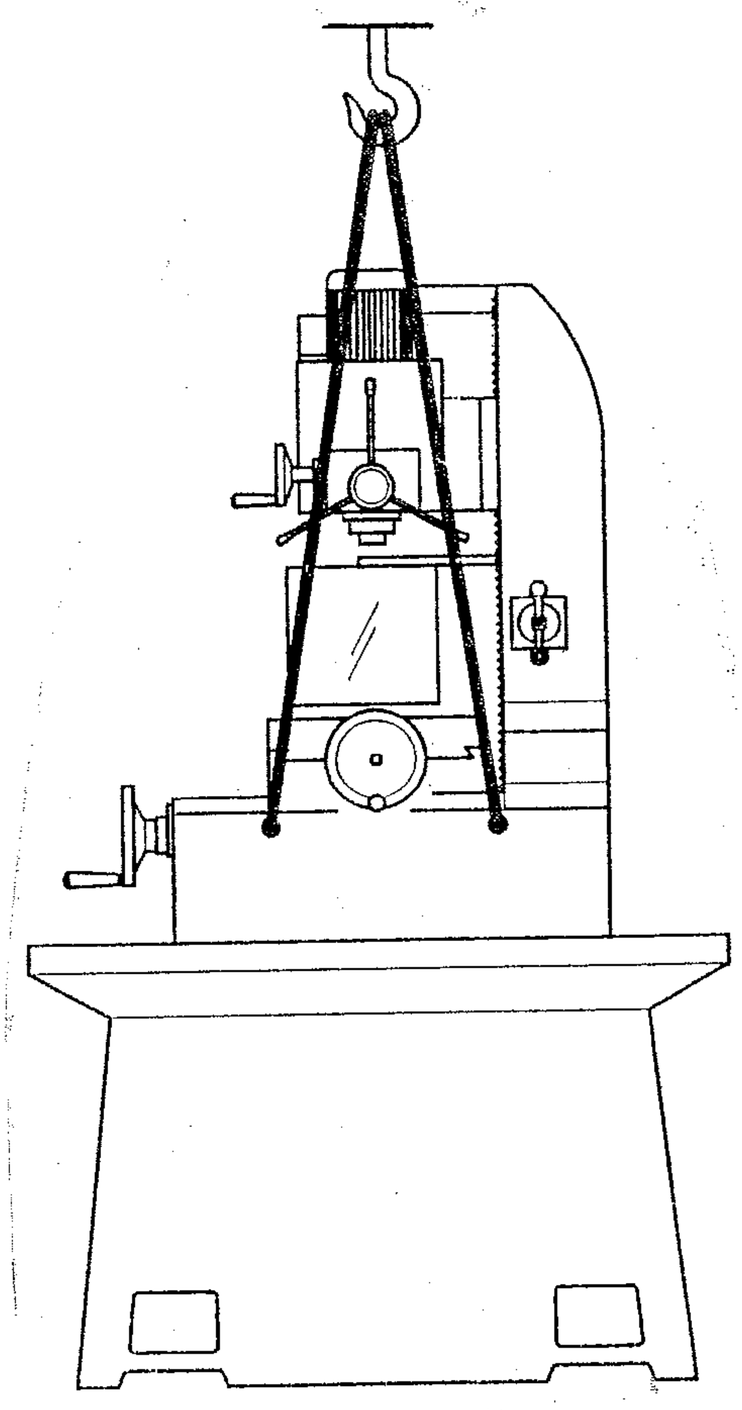


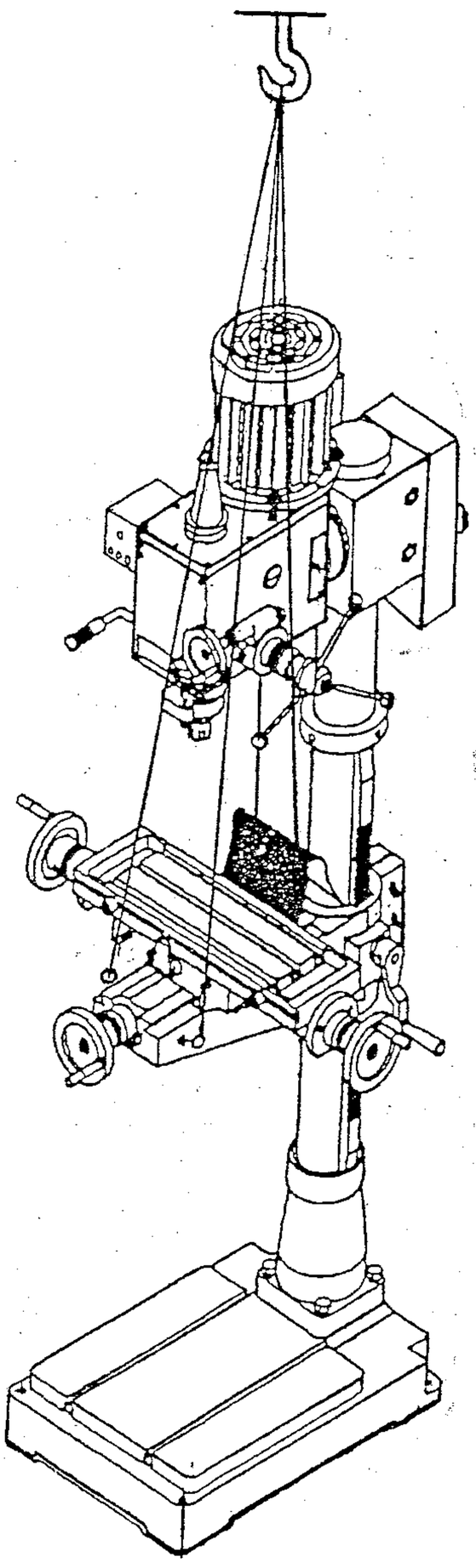


USE THE FOLLOWING FACILITIES TO LIFT THE MACHINE:
1.CRANE HOISTING.
2.2 PCS OF CABLES, EACH AT ϕ 12.7MM(½ ")× 1830MM(72")LONG.
3.1 STEEL BAR.

NOTE:1.MACHINE MUST ALWAYS BE KEPT BALANCED DURING LIFTING.
2.PLACE PROTECTING MATERIAL, SUCH AS HARD PAPER BOARD ,WOODEN WEDGES, ON ANY PART OF MACHINE THAT MIGHT BE CONTACTED BY THE CABLES.
3.CABLES MUST BE PLACED FIRMLY AT BOTH ENDS OF THE STEEL BARS TO PREVENT THE WIRES FROM SLIPPING OFF.

INSTALLATION :





USE THE FOLLOWING FACILITIES TO LIFT THE MACHINE:

1. CHAIN HOIST

2. CHAINS

3. 2PCS OF STEEL BARS EACH AT 25mm x 750mm LONG FOR FX-389D

4. 4PCS OF RING SCREWS EACH AT 8mm x 25mmLONG FOR FX-388D & FX-388C （PLEASE FIND FX-388D B–PART-NO72 & FX-388C B-PART- NO- 52）

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3.CABLES MUST BE PLACED FIRMLY AT BOTH ENDS OF THE STEEL BARS TO PREVENT THE WIRES FROM SLIPPING OFF

7.CLEANNING & LUBRICATING:

(1)THE 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 BRIGHT WORK WITH A LIGHT LUBRICANT. LUBRICATED ALL POINTS AS FIG.2.

(3)LUBRICATING POINTS AS ARROWS INDICATED.

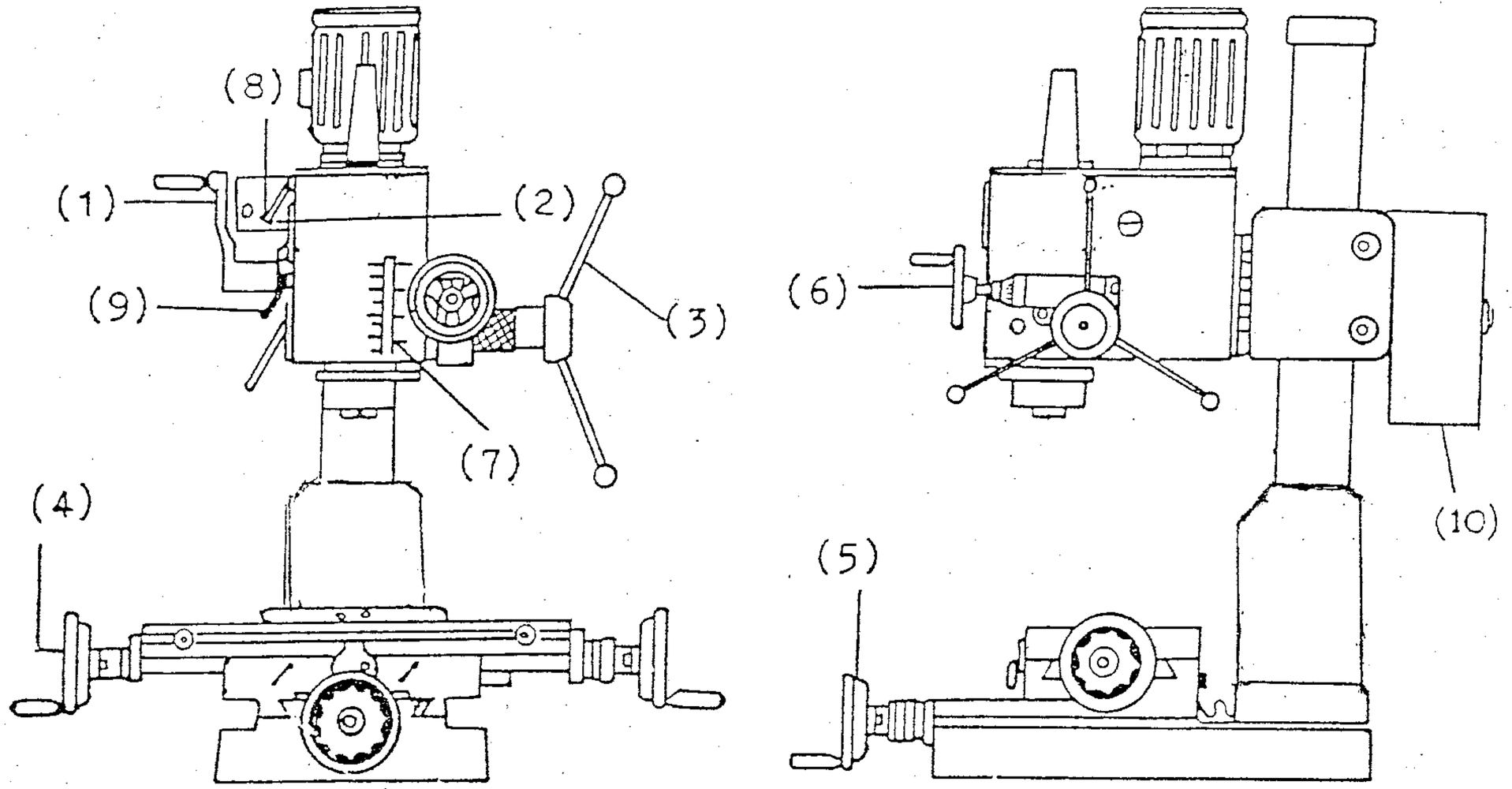

FIG 2

8.USE OF MAIN MACHINE PARTS (SEE FIG.2)

(1)TO RAISE AND LOWER THE HEAD BY HEAD HANDLE.
(2)EQUIPPED WITH AN ELECTRIC SWITCH.
(3)TO ADJUST THE QUICK OR SLOW FEEDING BY FEED HANDLE.
(4)TO ADJUST THE TABLE LEFT AND RIGHT TRAVEL BY TABLE HANDLE.
(5)TO ADJUST THE TABLE FORE AND AFT TRAVEL BY TALBE HANDLE WHEEL.
(6)TO OPERATE THE SPINDLE HANDLE WHEEL FOR MICRO FEED.
(7)TO ADJUST THE SCALE SIAE ACCRDING TO WORKING NEED.
(8)HIGH AND LOW SPEED LEVER.
(9)1,2,3 SPEED LEVER.
(10)ELECTRICAL CONTROL BOX.

9.PRECAUTION FOR OPERATION

INSPECTING ALL PARTS FOR PROPER CONDITION BEFORE OPERATION, IF NORMAL SAFETY PRECAUTIONS ARE NOTICE CAREFULLY, THIS MACHINE CAN PROVIDE THE OPERATION OF ACCURATE SERVICE.

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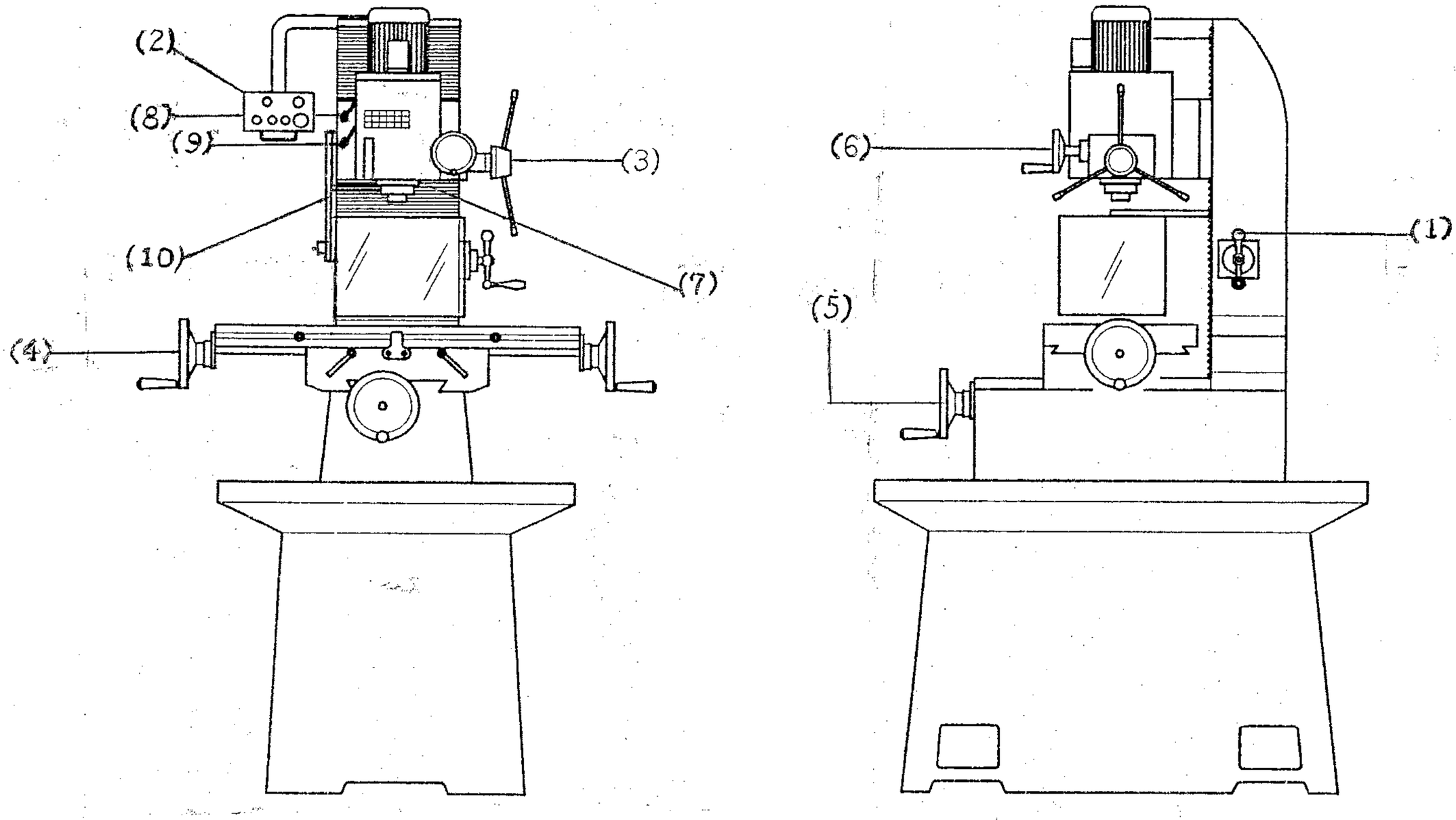

FIG 2

USE OF MAIN MACHINE PARTS (SEE FIG.2)

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(3)TO ADJUST THE QUICK OR SLOW FEEDING BY FEED HANDLE.

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10.PREPARING MILLING:

(a)ADJSUT SCREW ON THE GRADUATED DIAL TO THE DESIRED HIGHEST POSITION.

(b)MAKE THE FEED HANDLE AND THE WORM INNER GEAR CLUTCHING BY MOVING THE FEED HANDLE, THEN PERFORM MILLING BY MICRO FEED.

(c)ADJUST SPINDLE TO THE DESIRED WORKING POSITION BY SPINDLE HANDWHEEL AND LOCK THE RACK GEAR SLEEVE AT THE DESIRED HEIGHT WITH FIXED BOLT.

11.ADJUSTING TABLE SLACK:

(1)YOUR MARK IV IS EQUIPPED WITH FULL LENGTH TAPERED SLIDING PLATE TO ADJUST FOR EXCESS SLACK IN FORE AND AFT. LEFT AND RIGHT TABLE TRAVEL.

(2)TIGHTEN THE SLIDING PLATE BOLT CLOCKWISE WITH A BIG SCREW DRIVER FOR EXCESS SLACK.

(3)RELEASE THE SLIDING PLATE BOLT A LITTLE COUNTER-CLOCKWISE IF TOO TIGHT.

(4)TO ADJUST LEFT AND RIGHT TRAVEL, ADJUST THE SLIDING PLATE BOLT UNTIL FEEL A SLIGHT DRAG WHEN TURNING THE TABLE (FIG.3).

(5)TO ADJUST FORE AND AFT TRAVEL, ADJUST THE SLIDING PLATE BOLT AS SHOWN IN FIG.3.

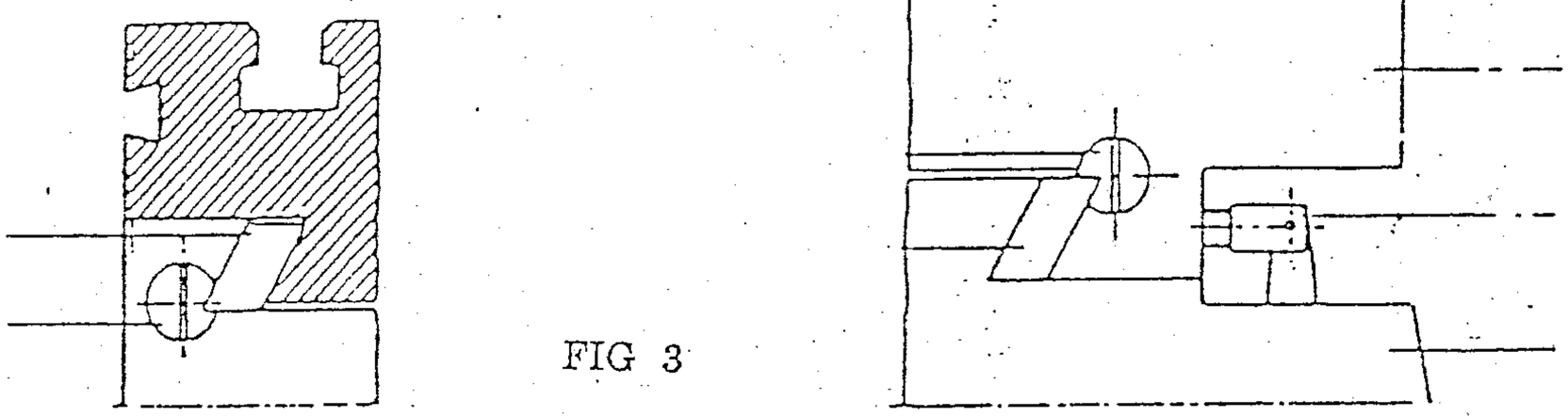


FIG 3

12.CLAMPING, TABLE BASE, AND MACHINE BASE:

(1)WHEN MILLING LEFT AND RIGHT, IT IS ADVISABLE TO LOCK THE FORE AND AFT 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 (FIG.4)

(2)TO TIGHTEN THE LEFT AND RIGHT TRAVEL OF THE TABLE FOR FORE AND AFT MILLING,TIGHTEN THE TWO SMALL LEAF SCREW ON THE FRONT OF THE TABLE BASE (FIG.4).

(3)ADJUSTABLE TRAVEL STOPS ARE PROVIDED ON THE FRONT OF THE TABLE FOR CONTROL OF CROSS TRAVEL AND THE DESIRED MILLING LENGTH.

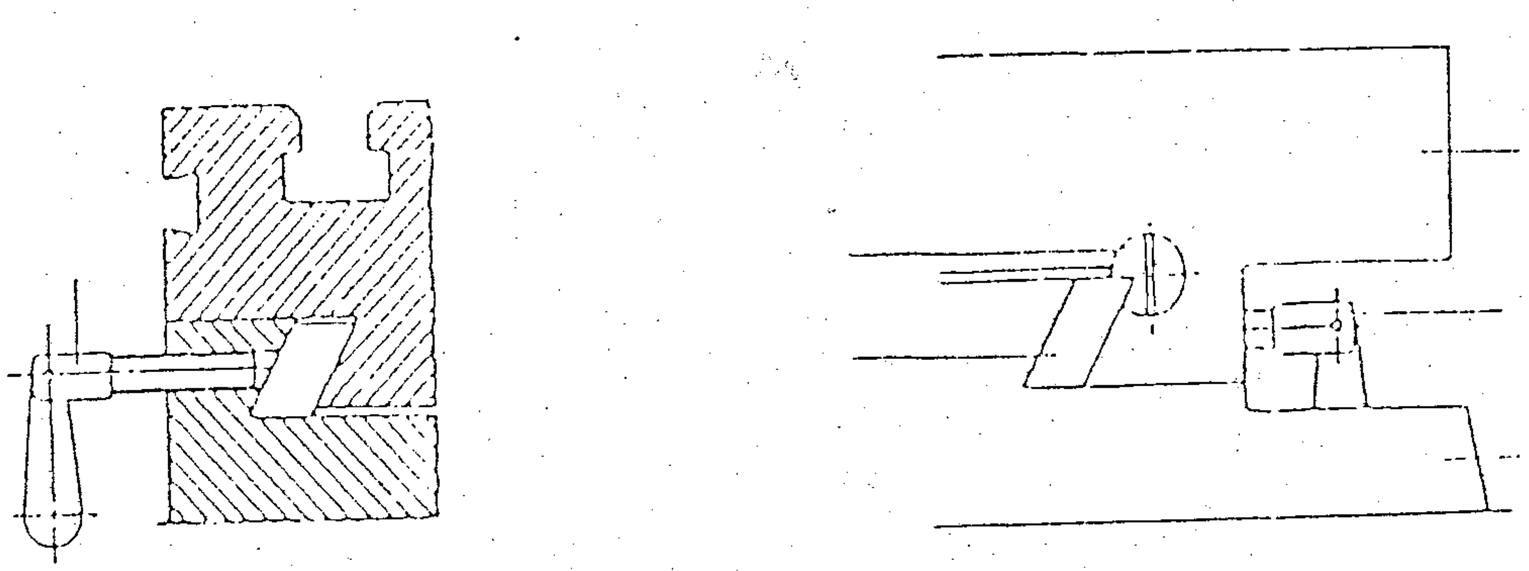
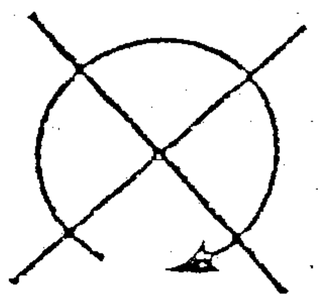


FIG 4

13.SPEED CHANGING:



ATTENTION
DO NOT CHANGE SPINDLE SPEED LEVERS WHEN THE SPINDLE IS ROTATING

1.TURN POWER OFF.
2.FIG 1-8 (H.L.)LEVERS.
3.FIG 1-9 (1,2,3,SPEED) LEVERES.

14.SPINDLE SPEEDS R.P.M.

LEVERS	50HZ	60HZ	2P/4P	2P/4P
H1	1250	1500	2500	3000
H2	670	800	1240	1600
H3	380	450	760	900
L1	190	230	380	460
L2	110	130	220	260
L3	50	60	100	120

15.EXTRA TOOLING AND ACCESSORIES

EACH OF MACHINE IS EQUIPPED WITH A MT #3 SPINDLE TAPER OR A R-8 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
MT-30#

16.TAPPING EQUIPMENT:

THIS MACHINE CAN BE EQUIPPED WITH AN ELECTRIC SWITCH FOR TAPPING OPERATION CLOCKWISE OR COUNTERCLOCKWISE, AND THE WORKING DEPTH ALSO CAN BE ADJUSTED BY THE LIMIT SWITCH.(ELECTRIC SWITCH WILL BE INSTALLED ACCORDING TO YOUR REQUIREMENT, AND YOU ARE JEST PAY THE COST ONLY.)

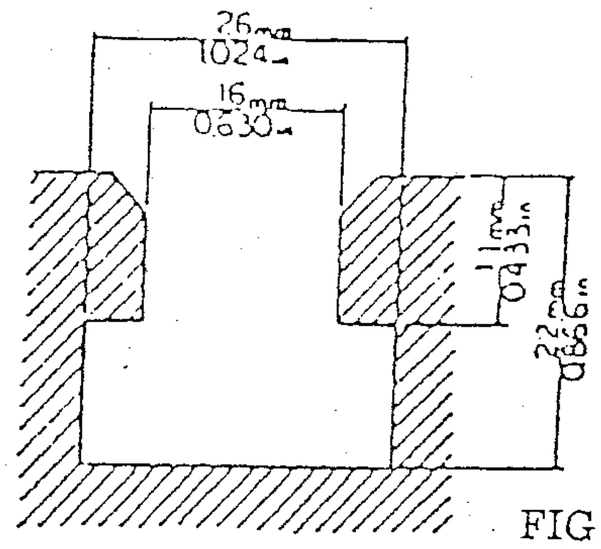


FIG 5

SPECIFICATION OF T-SLOT
THE SIZE OF T-SOLT ON TABLE AS FIG.5:

17.TROUBLE SHOOTING:

(1)SPINDLE

1)WHEN YOU FIND THE SPINDLE LOSEN, PLEASE TAKE OFF THE NAME PLATE, THE TWO SPINDLE NUTS CAN BE ADJUSTED IN POSITION.

2)WHEN SPINDLE IS LOSEN AFTER YOU PULL IT DOWN AND CAN NOT BE RETURNED OR CAN NOT BE OPERATED, EACH OTHER YOU MAY:

A.CHECK THE SPRING IN THE SPRING COVER IS BROKEN OR NOT. IF YES, REPLACE A NEW SPRING.

B.CHECK IN THE GEAR RACK THAT PREVENT THE MOVING. IF YES, BRUSH UP THE CHIPS, THEN USE OIL STONE GRIND THE RACK GEAR TO MAKE IT SMOOTH.

(2)GEAR-BOX

1)THERE IS A HOLE ON THE GEAR COVER FOR ADDING THE OIL, ALSO ANOTHER THERE HOLE UNDER THE GEAR BOX FOR USED OIL.

2)ALWAYS LET GEAR BOX OIL PROTECT. DON'T LET IT OVER LEVEL H.DON'T LET IT BELOW L.

3)GEAR OIL: ULTRALUBE OIL 90#.

(3)GEAR

WHEN START THE WORKING, NEVER CHAANGE THE SPEEDS, BECAUSE IT WILL DAMAGED THE MACHINE.

A.SERIOUSLY

1)GEAR WILL BE BROKEN (REPLACE A NEW ONE)

2)GEAR LEVER WILL BE BROKEN (REPLACE A NEW ONE)

3)THE MACHINE CAN NOT BE OPERATED.

B.SLIGHTLY

1)GEAR WILL BE DEFORMED.

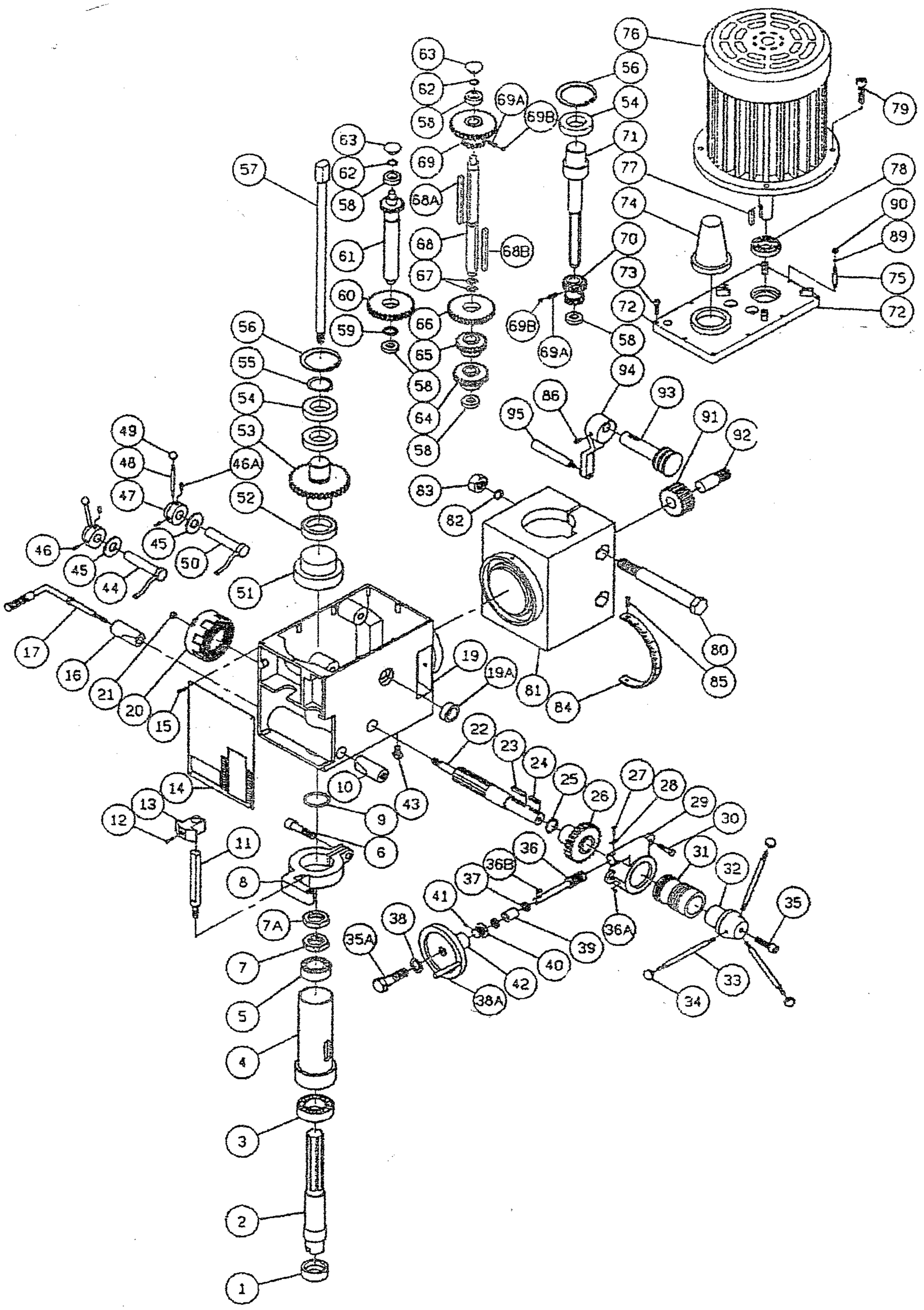
2)NOISE WILL BE GENERATED FROM THE GEAR.

(4)SPINDLE DEFORMED

REASONS: USE WRONG CLAMPS WHEN MACHINEING A BIG WORKPIECE. THIS WILL CAUSE THE WORKPIECE VISLENTLY MOVED BACK AND FORTH THEN

METHOD: REPLACE IT.

H-PART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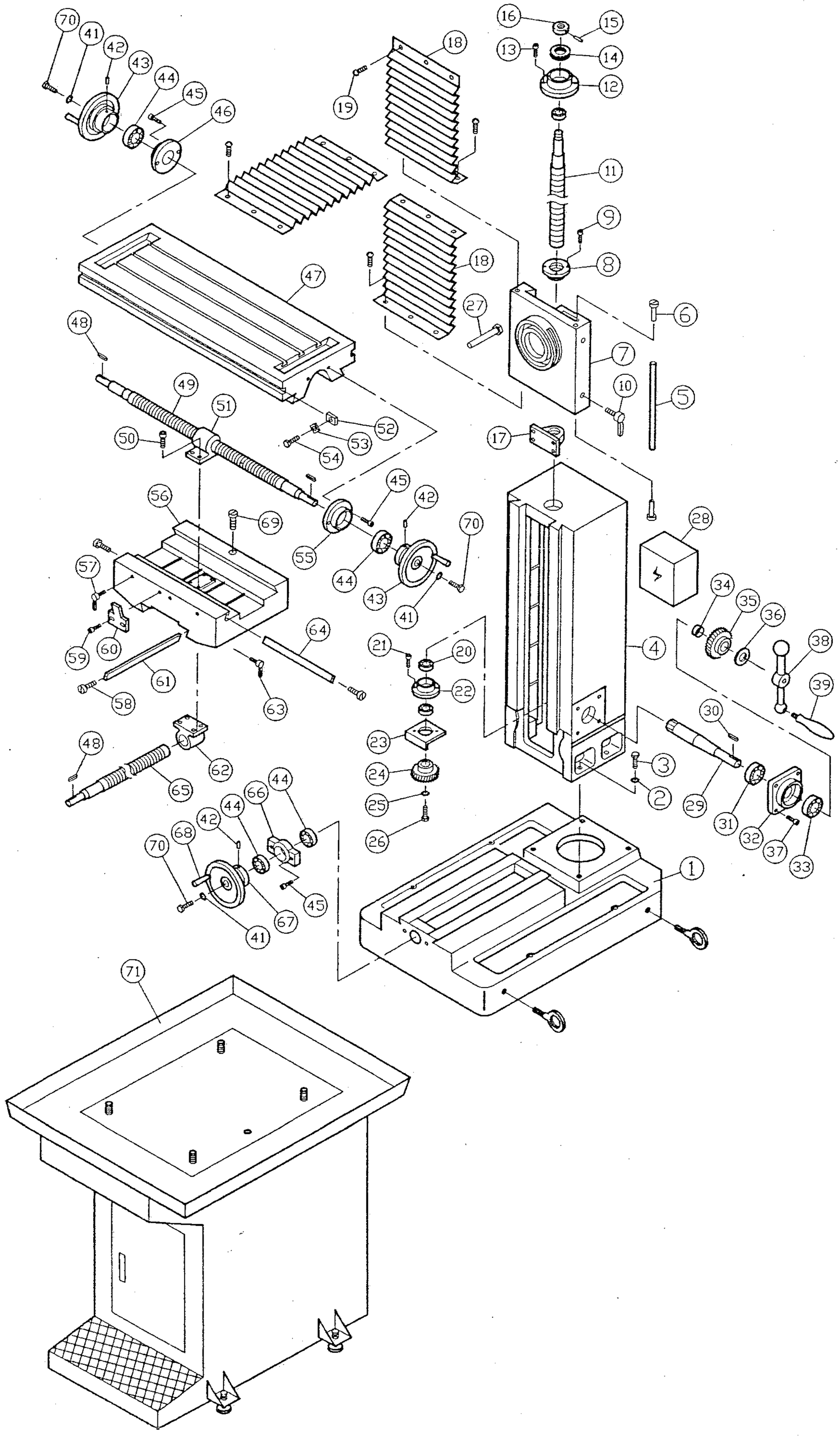
1	OIL SEAL(TCØ45xØ72x10T)	1	35A	CAP SCREW (M6x14L)	1
2	SPINDLE (MT3 OR R8)	1	36	WORM SHAFT	1
3	TAPPER ROLLOR(#30207)	1	36A	SET SCREW (M6x8L)	4
4	QUILL	1	36B	KEY (4x4x20L)	4
5	TAPPER ROLLOR (#30206)	1	37	THRUST BEARING (#51102)	2
6	CAP SCREW (M8x30L)	1	38	WASHER	1
7	GEAR WASHER	1	38A	GRIP (3/8")	1
7A	SPINLE NUT	1	39	SLEEVE	1
8	BRACKET	2	40	MICRO FEED GRADUATED DIAL(MM/INCH)	1
9	O RING 75Ø	1	41	SET SCREW (M6x8L)	1
10	HEX NUT	1	42	MICRO FEED HANDLE	1
11	STROKE ROD	1	43	OIL PLUG (3/8"~PT)	2
12	CAP SCREW(M8x16L)	1	44	GEAR CHANGE SPEED 1,2,3 ROD	1
13	FIXING BLOCK	1	45	OIL SEAL (TCØ22xØ12x7T)	2
14	NAME PLATE	1	46	SPRING SPIN (4Øx40L)	2
15	PAN SCREW	4	47	FIXING SEAT	2
16	CLAMPING PIPE	1	48	GEAR CHANGE SPEED LEVER	2
17	CLAMPING HANDLE	1	49	GRIP HANDLE(3/8")	2
18	CLAMPING NUT	1	50	GEAR CHANGE H&L ROD	1
19	GEAR BOX	1	51	SLEEVE	1
19A	OIL WINDOW(1/2" PT)	1	52	OIL SEAL (TCØ47x35x7T)	1
20	DISC SPRING SET	1	53	GEAR (M2x53T)	1
21	HEX NUT	1	54	BALL BEARING(6007Z)	2
22	PINION SHAFT	1	55	C-RING (S35)	1
23	KEY (5x5x40L)	1	56	SNAP RING(R62)	1
24	KEY (5x5x20L)	1	57	DRAW BAR (M12x1.75P)	1
25	C-RING(S26)	1	58	BALL BEARING (6202Z)	5
26	WORM GEAR	1	59	C-RING (S22)	1
27	INDICATOR	1	60	GEAR (M2x41T)	1
28	RIVET	2	61	C-SHAFT GEAR (M2x15T)	1
29	WORM GEAR COVER	1	62	SNAP-RING (R35)	2
30	CAP SCREW (M8x16L)	2	63	END COVER	2
31	MIRCO FEED CONNECTOR	1	64	GEAR ((M2x35T))	1
32	FIXING SEAT	1	65	GEAR (M2x28T)	1
33	FIXING SEAT HANDLE	3	66	GEAR (M2x44T)	1
34	GRIP HANDLE 1/2"	3	67	C-RING (S18)	2
35	CAP SCREW (3/8"x1")	1	68	B-SHAFT	1

68A	KEY (5x5x50L)	1
68B	KEY (6x6x75L)	1
69	GEAR (M2x16T/42T)	1
69A	SPRING	2
69B	BALL Ø8	2
70	GEAR (M2x31T/15T/23T)	1
71	A-SHAFT	1
72	GEAR BOX COVER	1
73	CAP SCREW(6x25L)	8
74	SPINDLE TOP COVER	1
75	TAPER PIN(NO.4)	2
76	MOTOR(AC 1.5HP/2 HP)	1
77	KEY(6x6x30L)	1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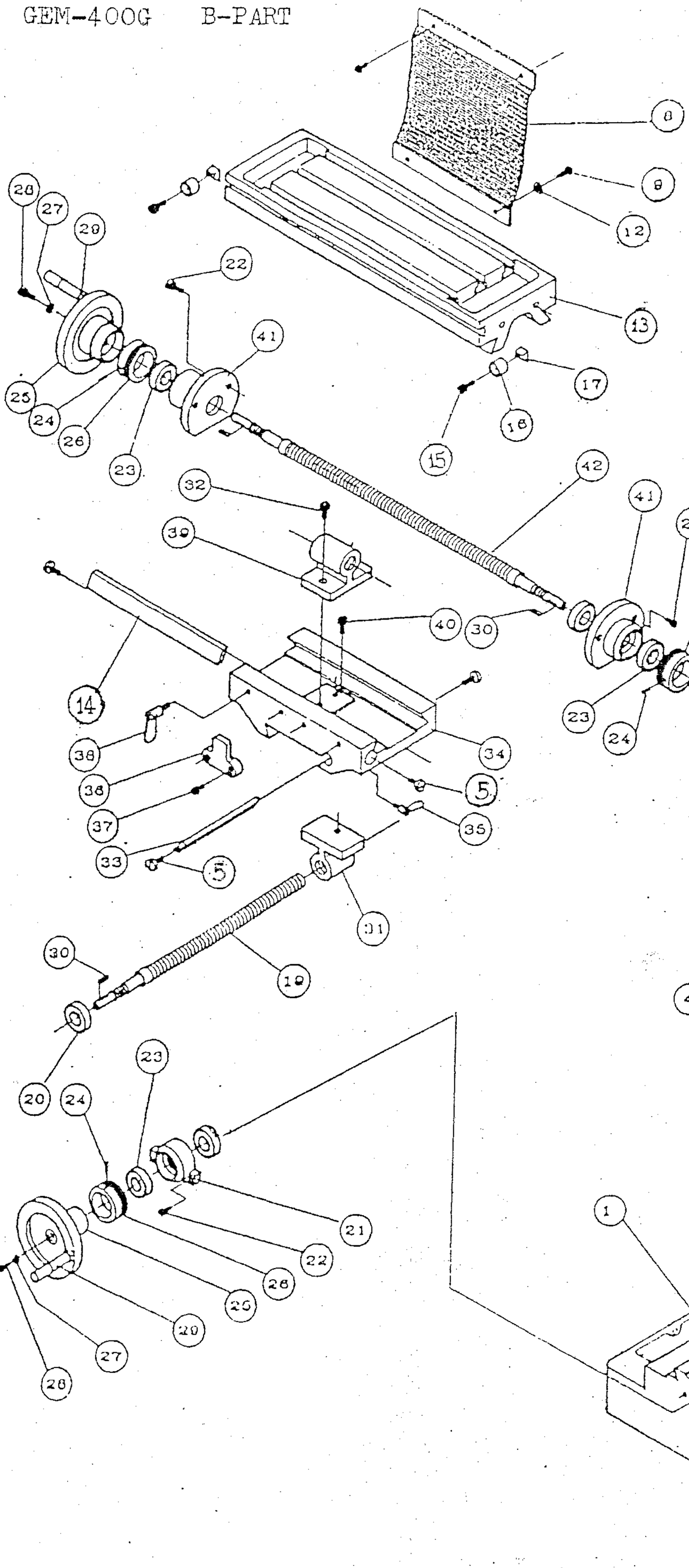
1	BASE	1
2	SPRING WASHER	4
3	HEX BOLT	4
4	MAIN COLUMN	1
5	UP & DOWN TRAVEL GIB	1
6	GIB ADJUSTING SCREW	2
7	UP& DOWN TRAVEL BASE	1
8	Z-AXIS LEADSCREW NUT	1
9	CAP SCREW(M8x20L)	2
10	CLAMPING BOLT(M8)	2
11	Z-AXIS LEADSCREW	1
12	SEAT SET	1
13	CAP SCREW(M6x16)	2
14	BALL BEARING(6002Z)	2
15	TAPER PIN(NO.4)	1
16	SEAT RING	1
17	SCREW NUT SET	1
18	RUBBER CHIP COVER	3
19	CAP SCREW(M5x8)	12
20	BALL BEARING(6002Z)	2
21	CAP SCREW(M6x16)	2
22	SEAT SET	1
23	BRACKET	1
24	WORM WHEEL	1
25	WASHER	1
26	CAP SCREW(M8x16)	1
27	T-SLOT BOLT(1/2x50L)	3
28	ELETRICAL CONTROL BOX	1
29	WORM SHAFT	1
30	KEY	1
31	BALL BEARING (6204Z)	2
32	BEARING SEAT SET	1
33	SAME 31	
34	SEAT RING	1
35	MEMORY RING	1
36	SET NUT	1
37	CAP SCREW(M8x16L)	4
38	HANDLE	1
39	GRIP	1
40	RING NUT	4
41	WASHER	3
42	SET SCREW(M5x5L)	3
43	HANDLE WHEEL	3
44	MEMORY RING	3
45	CAP SCREW(M6x16L)	6
46	BEARING SEAT SET	1
47	WORKING TABLE	1
48	KEY	3
49	LONGITUDINAL LEAD SCREW	1
50	CAP SCREW(M8x20L)	2
51	LONGITUDINAL LEAD SCREW NUT	1
52	STOPPER SET	2
53	STOPPER BUSH	2
54	CAP SCREW(M6x20L)	2
55	RIGHT BEARING SEAT SET	1
56	SADDLE	1
57	SAME 10	
58	SAME 6	
59	CAP SCREW(M8x16L)	2
60	STOPPER BLOCK	1

61	CROSS TRAVEL GIB	1
62	CROSS LEAD SCREW NUT	1
63	WING SCREW(3/8)	2
64	LONGITUDINAL TRAVEL GIB	1
65	CROSS LEAD SCREW	1
66	BEARING SEAT SET	1
67	MEMORY RING	3
68	HANDLE GRIP	3
69	CAP SCREW(M8x40L)	1
70	CAP SCREW(M8x12L)	3
71	MACHINE STAND	1

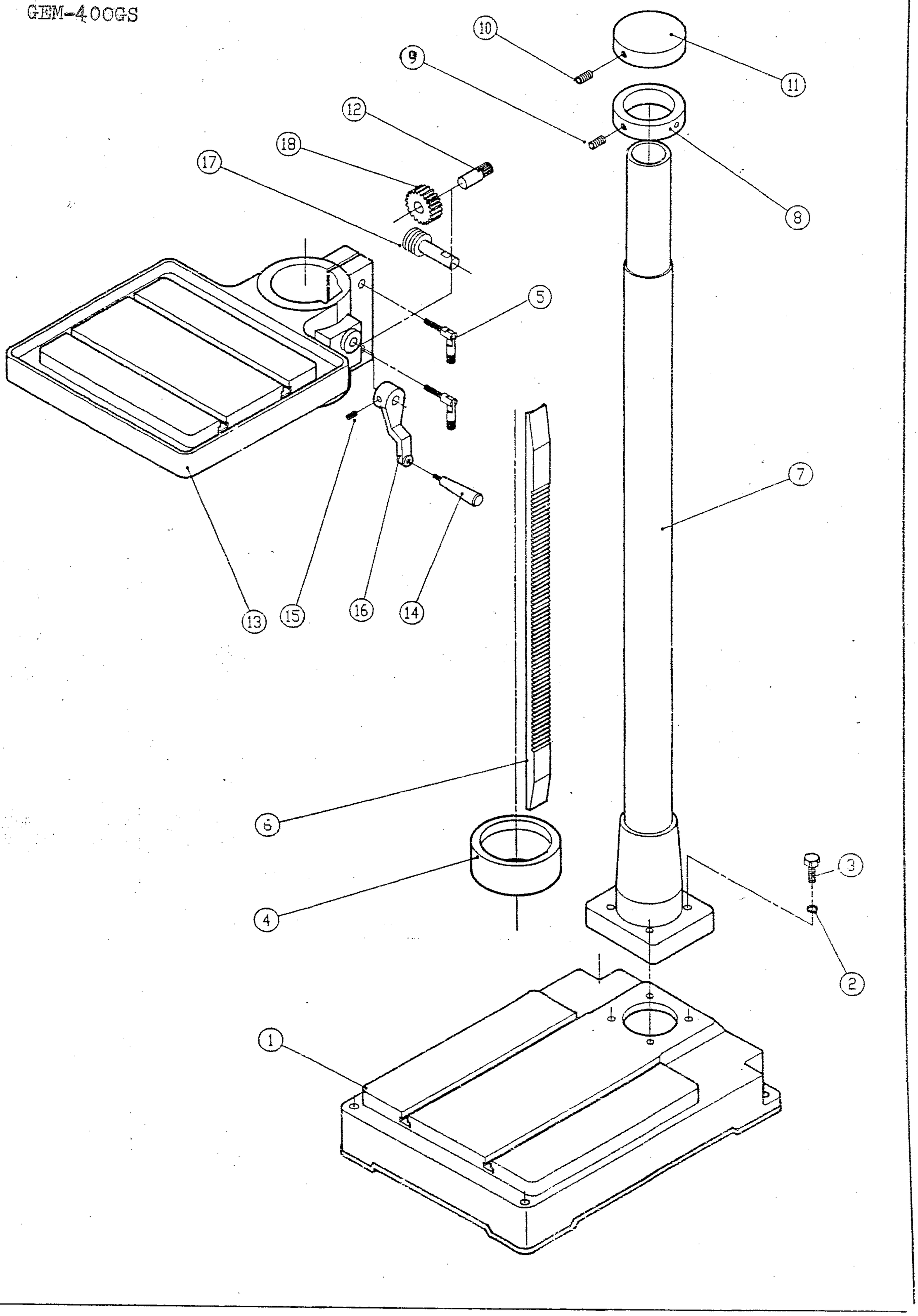
GEM-400G B-PART



B--PART

1	BASE	1
2	SPRING WASHER	4
3	HEX BOLT	4
4	FLANGE RING	1
5	TRAVEL GIB SCREW 5/16"-20UNF× 25L)	4
6	RACK GEAR	1
7	COLUMN	1
8	RUBBER CHIPSA COVER	1
9	CAP SCREW (M8× 16L)	4
10	SET SCREW (M8× 10L)	2
11	COVER SEAT	1
12	WASHER	4
13	WORKING TABLE	1
14	LONGITUDINAL TRAVEL GIB	1
15	CAP SCREW (M6× 16L)	2
16	STOPPER BUSH	2
17	STOPPER SET	2
18	WORM WHEEL	1
19	HANDLE SCREW	1
20	BEARING (#6002Z)	5
21	BEARING BASE	1
22	CAP SCREW (M5× 6L)	6
23	BALL BEARING (#6002Z)	5
24	SET SCREW (M5× 6L)	3
25	HANDWHEEL	3
26	TRAVEL DIAL	3
27	WASHER	3
28	CAP SCREW (M8× 12L)	3
29	GRIP	3
30	KEY (5× 5× 12L)	3
31	CROSS LEADSCREW NUT	1
32	CAP SCREW (M8× 20L)	2
33	CROSS TRAVEL GIB	1
34	SADDLE	1
35	WING SCREW (3/8")	2
36	STOPPER BLOCK	1
37	CAP SCREW (M8× 16L)	2
38	WING SCREW (M8)	2
39	LONGITUDINAL LEADSCREW NUT	1
40	CAP SCREW (M8× 30L)	1
41	BEARING SEAT SET	2
42	LONGITUDINAL LEADSCREW	1
43	RING NUT	4

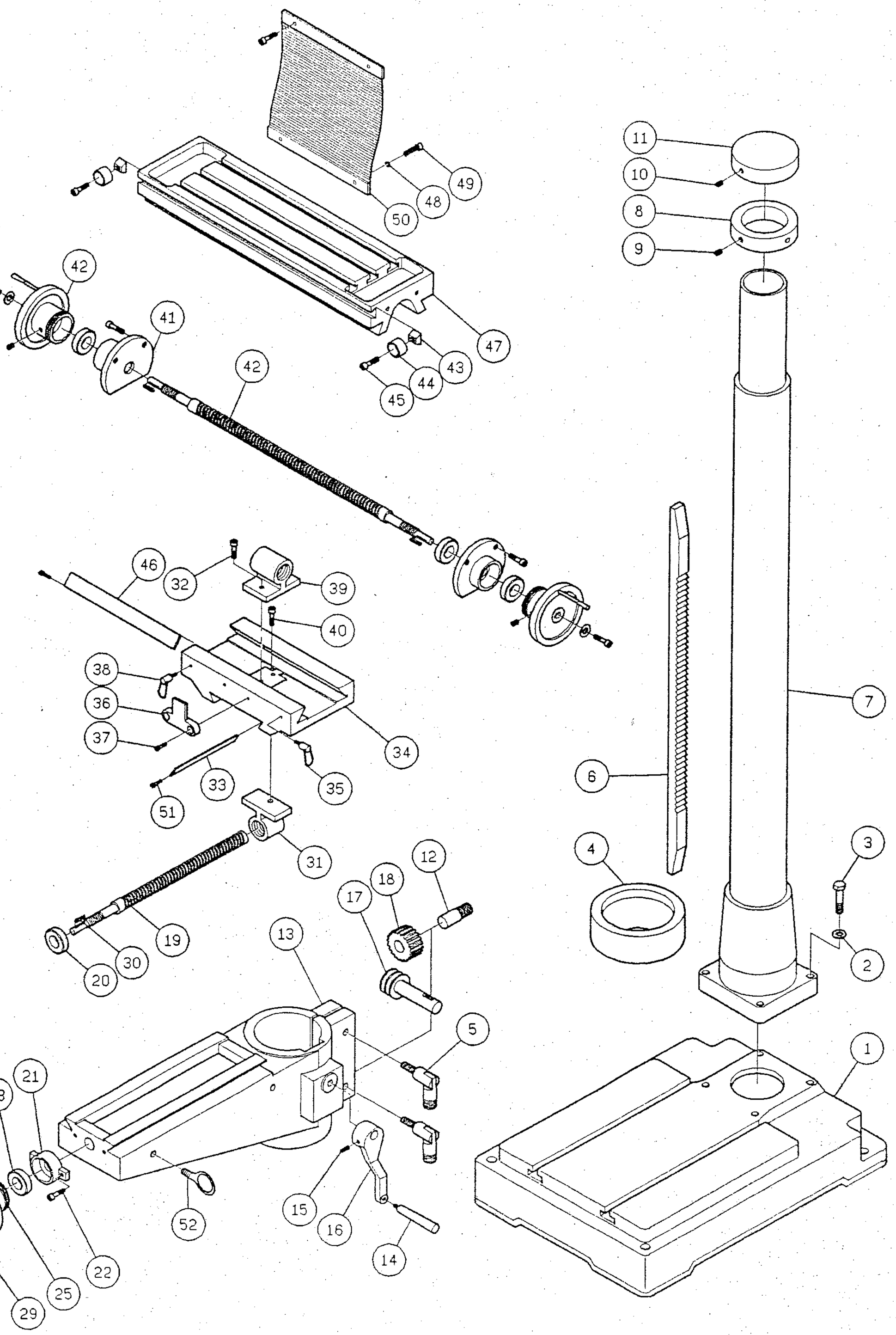
GEM-400GS



BASE LIST

NO.	DESCRIPTION	Q'TY
1	BASE	1
2	SPRING WASHER	4
3	HEX BOLT 5/8"x1/2"L	4
4	FLANGE RING	1
5	CLAMPING BOLT 1/2"	2
6	RACK GEAR	1
7	COLUMN (115mm)	1
8	CLAMPING RING	1
9	SET SCREW M10x12L	2
10	SET SCREW M8x10L	1
11	COVER SEAT	1
12	CLAMPING BOLT 1/2"	1
13	SQUARE TABLE	1
14	CRANK HANDLE GIP	1
15	SET SCREW M8x10L	1
16	CRANK HANDLE	1
17	WORM SHAFT	1
18	WORM WHEEL	1

GEM-400GCT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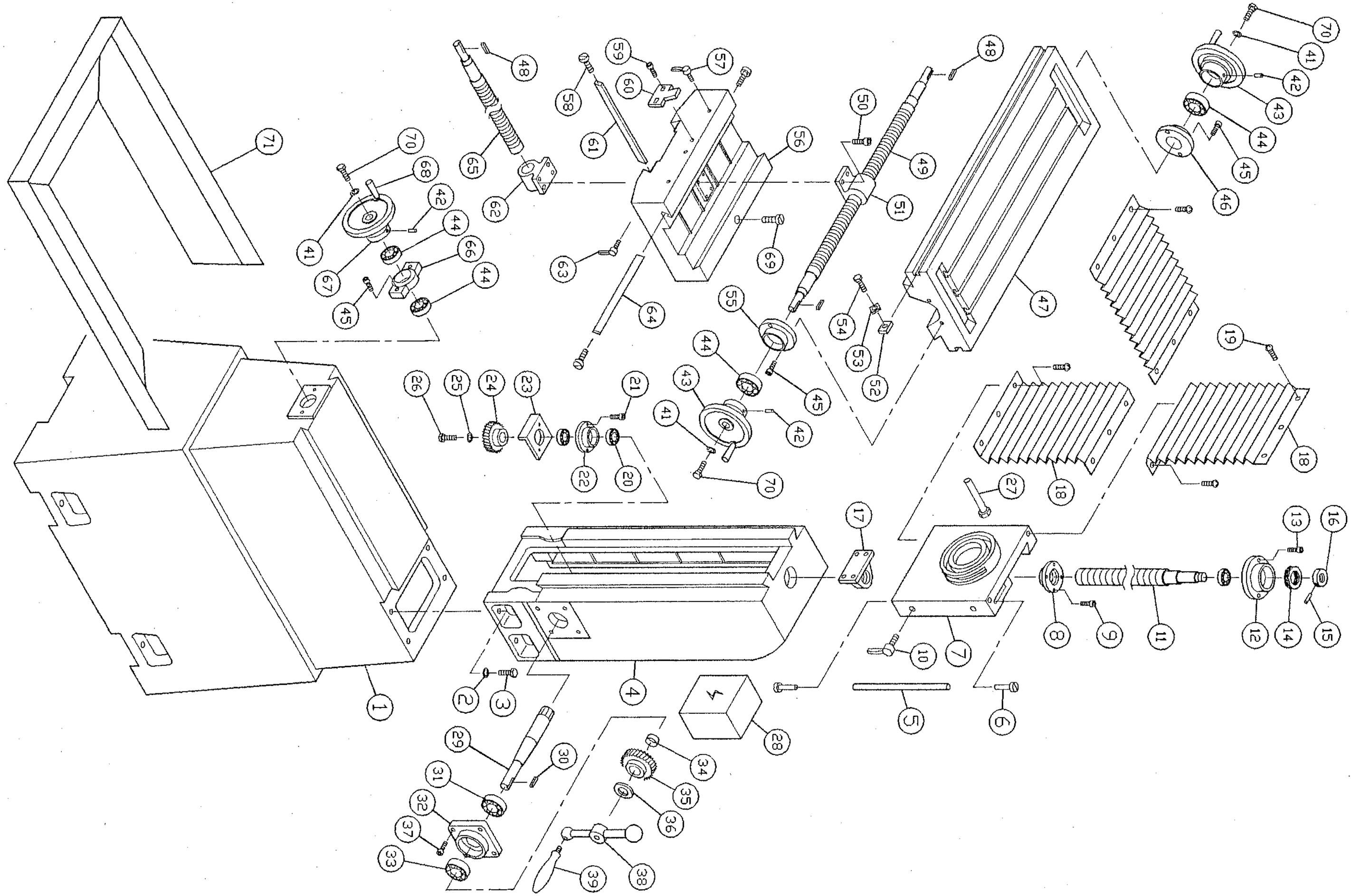
B-PART

1	BASE	1
2	SPRING WASHER	4
3	HEX BOLT (5/8"x3"L)	4
4	FLANGE RING	1
5	CLAMPING BOLT(1/2")	2
6	RACK GEAR	1
7	COLUMN (ø116)	1
8	CLAMPING RING	1
9	SET SCREW (M8x12L)	3
10	SET SCREW (M8x10L)	2
11	COVER SEAT	1
12	CLAMPING BOLT	1
13	TABLE BASE	1
14	CRANK HANDLE GIP	1
15	SET SCREW (M8x10L)	1
16	CRANK HANDLE	1
17	WORM SHAFT	1
18	WORM WHEEL	1
19	HANDLE SCREW	1
20	BEARING (#6002Z)	5
21	BEARING BASE	1
22	CAP SCREW (M6x16L)	6
23	BALL BEARING (#6002Z)	5
24	SET SCREW (M5x6L)	3
25	HANDLE WHEEL	3
26	TRAVEL DIAL	3
27	WASHER	3
28	CAP SCREW (M8x12L)	3
29	GRIP	3
30	KEY (5x5x12L)	3
31	CROSS LEADSCREW NUT	1
32	CAP SCREW (M8x20L)	2
33	CROSS TRAVEL GIB	1
34	SADDLE	1
35	WING SCREW (3/8")	2
36	STOPPER BLOCK	1
37	CAP SCREW (M8x16L)	2
38	WING SCREW (M8)	2
39	LONGITUDIAL LEADSCREW NUT	1
40	CAP SCREW (M8x30L)	1
41	BEARING SEAT SET	2
42	LONGITUDIAL LEADSCREW	2
43	STOPPER SET	2
44	STOPPER BUSH	2
45	CAP SCREW (M6x16L)	2
46	LONGITUDIAL TRAVEL GIB	1
47	WORKING TABLE	1
48	WASHER	4
49	CAP SCREW (M5x12L)	4
50	RUBBER CHIPS COVER	1
51	TRAVEL GIB SCREW 5/16"-20UNFx25L)	4
52	RING NUT	4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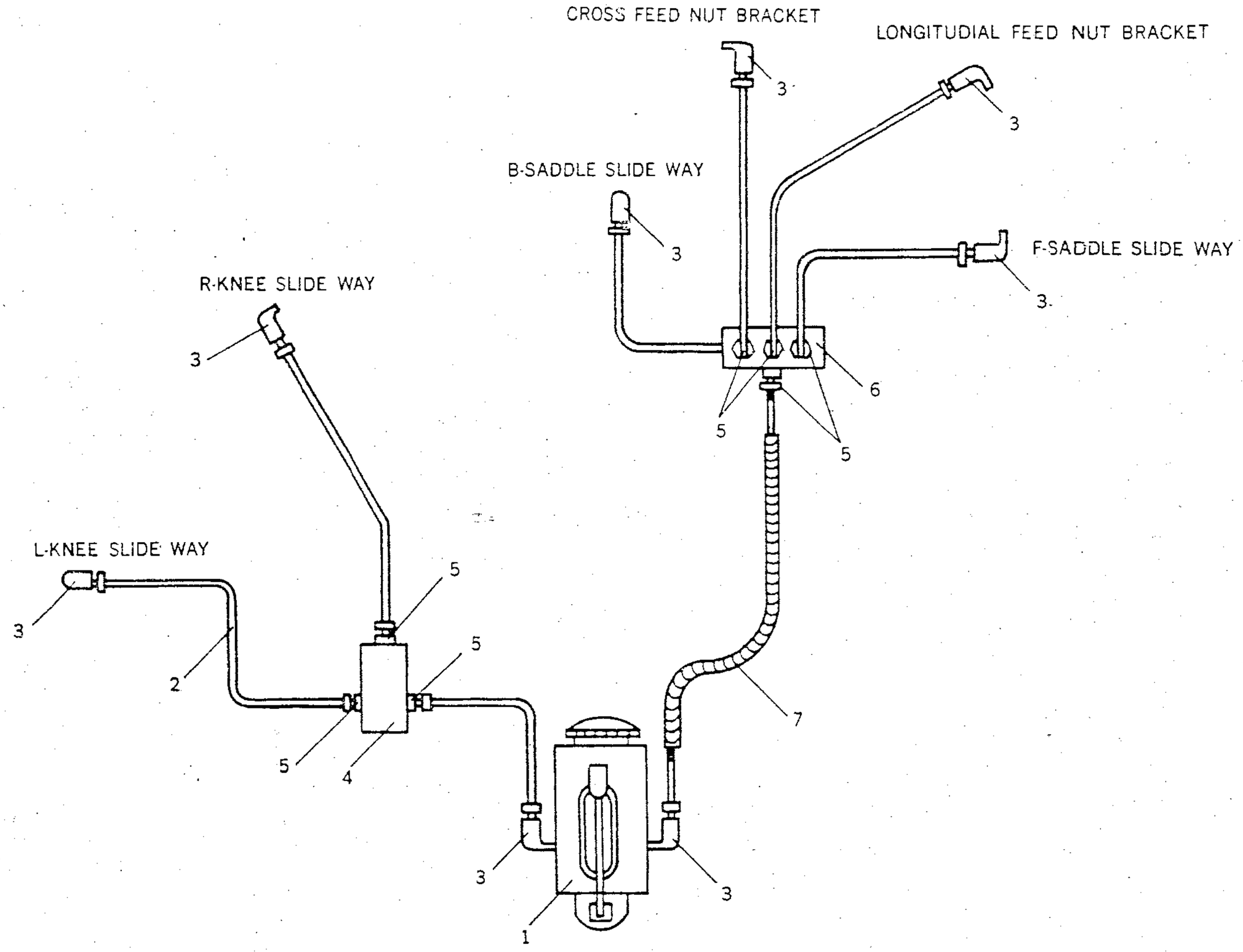
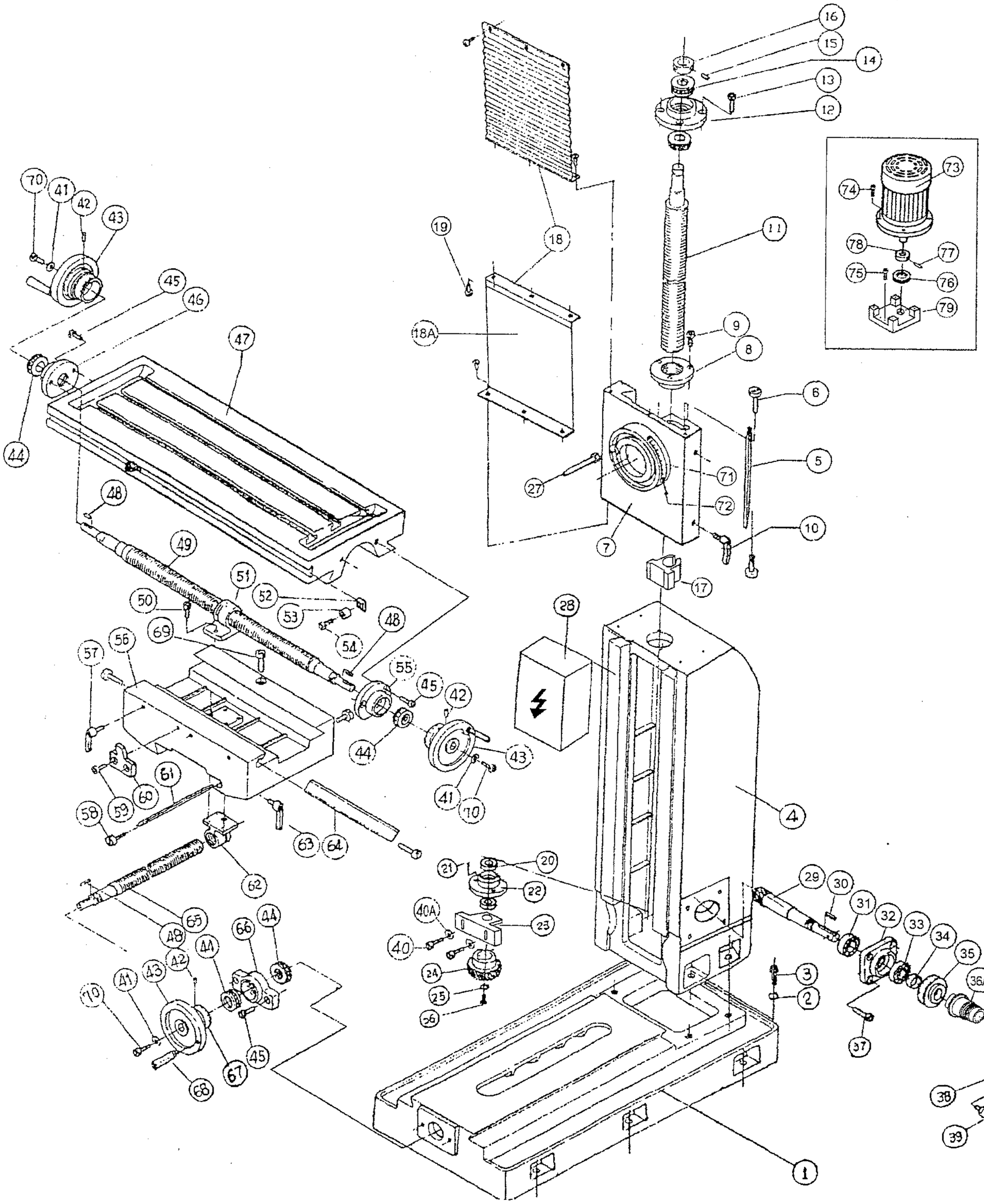
SY88-03

CENTRAL LUBRICATING OIL-FEEDING EQUIPMENT



ITEM NO.	PARTS NO.	DESCRIPTION
1	9001	Hand Oiler
2	9002	Aluminum Pipe
3	9003	Elbow Joint (8 Req.)
4	9004	T-Joint
5	9005	Straight Joint (7 Req.)
6	9006	Oil Regulating Distributor
7	9007	Outside Steel Flexible Tube

GEM-500G Ⅱ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1	BASE	1
2	SPRING WASHER(M16)	4
3	HEX BOLT(5/8"x2-1/2"L)	4
4	MAIN COLUMN	1
5	UP & DOWN TRAVEL GIB	1
6	GIB ADJUSTING SCREW(5/16"x24 UNF)	6
7	UP & DOWN TRAVEL BASE	1
8	Z-AXIS LEAD SCREW NUT	1
9	CAP SCREW(M6x20L)	3
10	CLAMPING BOLT(M8)	4
11	Z-AXIS LEAD SCREW	1
12	SEAT SET	1
13	CAP SCREW(M8x16L)	2
14	BALL BEARING(6002Z)	2
15	SPRING PIN(4X40)	1
16	SEAT RING	1
17	SCREW NUT SET	1
18	UPPER RUBBER CHIP COVER	1
18A	DOWNNER RUBBER CHIP COVER	1
19	CAP SCREW(M5x12L)	8
20	BALL BEARING (6003ZZ)	2
21	CAP SCREW (M6x20L)	2
22	SEAT SET	1
23	BRACKET	1
24	WORM WHEEL	1
25	WASHER	1
26	CAP SCREW (M8x14L)	1
27	T-SLOT BOLT (1 / 2"x50L)	3
28	ELETRICAL CONTROL BOX	1
29	WORM SHAFT	1
30	KEY (3x3x15L)	2
31	BALL BEARING (6204ZZ)	2
32	BEARING SEAT SET	1
33	SAME 31	
34	SEAT RING	1
35	MEMORY RING	1
36	SET NUT	1
36A	MEMORY RING SET	1
37	CAP SCREW (M8x16L)	4
38	HANDLE	1
39	GRIP	1
40	CAP SCREW (M8x25L)	2
40A	WASHER (M8)	4
41	WASHER(M8)	3
42	SET SCREW(M5x8L)	3
43	HANDLE WREEL	3
44	BALL BEARING(6002ZZ)	5
45	CAP SCREW (M6x16L)	6
46	LEFT BEARING SEAT SET	1
47	WORKING TABLE	1
48	KEY (4x4x20L)	3
49	LONGIT UDINAL LEAD SCREW	1
50	CAP SCREW (M8x20L)	2
51	LONGITUDINAL LEAD SCREW NUT	1
52	STOPPER SET	2
53	STOPPER BUSH	2
54	CAP SCREW (M6x20L)	2
55	RIGHT BEARING SEAT SET	1
56	SADDLE	1
57	SAME 10	
58	SAME 6	
59	CAP SCREW(M8x16L)	2
60	STOPPER BLOCK	1
61	CROSS TRAVEL GIB	1
62	CROSS LEAD SCREW NUT	1
63	WING SCREW (3/8")	2
64	LONGITUDINAL TRAVEL GIB	1
65	CROSS LEAD SCREW	1
66	FRONT BEARING SEAT SET	1
67	MEMORY RING	3
68	HANDLE GRIP(3/8")	3
69	CAP SCREW (M8x30L)	1
70	CAP SCREW (M8x14L)	3
71	TILTING GRADUATED PLATE	1
72	RIVET	3

OPTIONAL ACCESSORIES FOR Z-AXIS UP & DOWN BY GEAR MOTOR

73	GEAR MOTOR(1/4" HP)	1
74	CAP SCREW (M8x20L)	4
75	CAP SCREW (M8x16L)	4
76	BALL BEARING (6005ZZ)	1
77	SPRING PIN(4Øx40L)	1
78	SEAT RING	1
79	SEAT SET(GEAR MOTOR HOUSING)	1