

myford

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VERTICAL MILLING MACHINE

MODEL VM-C

SERVICE MANUAL

READ THIS MANUAL CAREFULLY

It is essential to give the Serial Number of your machine in any order of repair parts to assure prompt and accurate service.

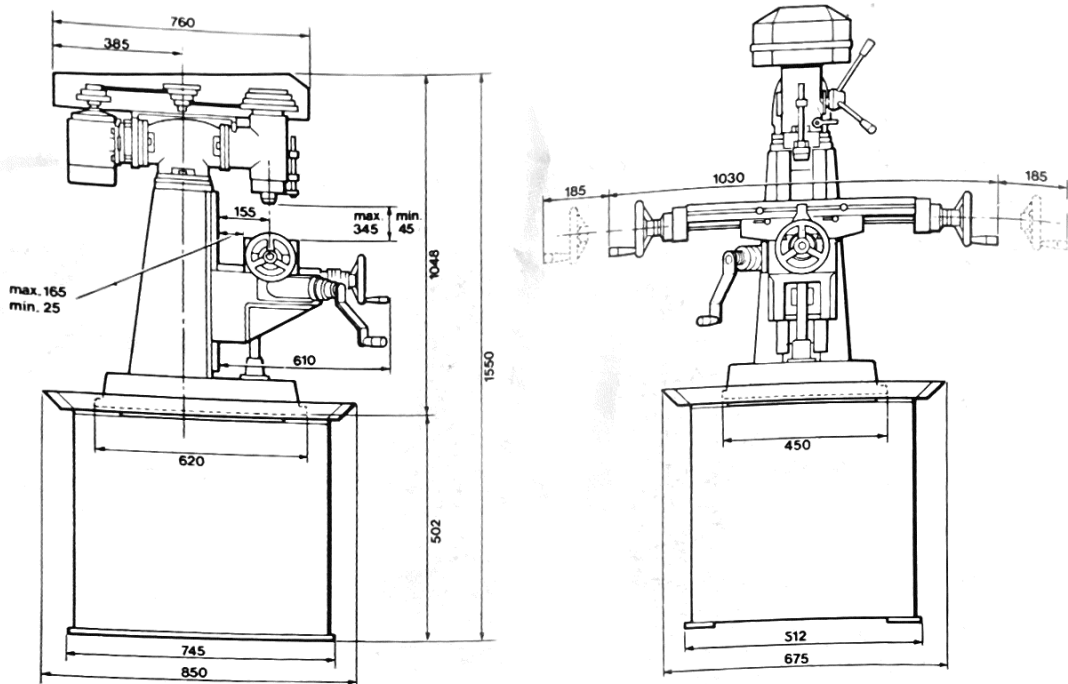
Order repair parts by part numbers, description and machine serial number.

VERTICAL MILLING MACHINE

VM-C

Working surface of table.....	610×150mm	24"×5 ⁷ / ₈ "
Longitudinal travel.....	370mm	14 ¹ / ₂ "
Cross travel.....	140mm	5 ¹ / ₂ "
Vertical travel.....	300mm	11 ¹³ / ₁₆ "
Maximum height from spindle to table.....	345mm	13 ¹ / ₂ "
Distance centre of spindle to column.....	155mm	6 ¹ / ₁₆ "
9 spindle speeds.....	182-2680r.p.m.	
Taper in spindle.....	R8	
Travel of spindle.....	80mm	3 ³ / ₁₆ "
Motor.....	½h.p. 3ph	
Net weight of machine.....	308Kg	679lbs

REFERENCE DIMENSIONS:



FEATURES:

1. Myford Model VM-C is a compact vertical milling machine. It is easy to set up. The controls are designed for operator convenience with dual table hand wheels.
2. It is very practical for technical schools, small parts production, toolrooms, R&D work, maintenance shops and even hobby use.
3. The machine is ideally suited for many operations, including: conventional milling, compound angle milling, engraving, drilling and jig boring.
4. All "ways" are hand scraped for perfect bearing and alignment. The table is ground for perfect squareness.
5. Castings are high strength material. They are aged for several months, before normalizing and tempering, to minimize deformation.
6. Anti friction bearings are procured from famous manufacturers such as SKF, FAG, NSK, etc... completely interchangeable world wide.

— NOTICE —

1. Remove protective crating and skids carefully, in the event of damage in transit, contact our representative and the transportation company making delivery.
2. The machine is carefully inspected and tested in operation by Q.C. personnel before it leaves our factory, if any defects are found on delivery, write us directly.
3. Read the catalogue and become familiar with the parts locations on the drawings as it will be easier to understand this manual.

I INSTALLATION:

To set the machine on a concrete foundation, it's advisable to apply a little grout to touch up any unevenness in the concrete in order to get a solid foundation at all points.

When setting machine on a floor that has any surface irregularities, shims should be used to correct this condition to the greatest extent possible.

II PRE- LUBRICATION:

Thoroughly clean the machine with gasoline or kerosene, then lubricate all the slide ways with S.A.E. #10 and gears with S.A.E. #30 lubricant. Be sure the machine is lubricated properly before starting.

III LEVELLING MACHINES:

Set machines by levelling the work table lengthwise and crosswise with a precision levelling instrument (refer to the test readings in the attached test records).

IV INSPECTION:

Inspect the machine with the attached original testing records for reference.

V SWITCH BOX:

Switch box is located on the left side of the column, on-off only.

VI ADJUSTMENT OF TABLE GIB:

The table is provided with a full length tapered gib in the saddle with an adjusting screw on each end. To take up gib tighten the two screws until a slight drag is felt when moving the table by hand. If the table is not tight enough, loosen the adjusting screw on small end, and tighten up adjusting screw on big end. If feel is too tight, reverse the adjusting procedure.

VII ADJUSTMENT OF SADDLE AND KNEE GIBS:

To tighten gibs the same method as described above is used.

VIII CLAMPING TABLE, SADDLE AND KNEE:

When milling with longitudinal table feed only, it is advisable to clamp the knee with the column and the saddle with the knee to add rigidity to these members and provide for heavier cuts with a minimum of vibration. The saddle locking lever is located on the left side of saddle to the operator, apply clamping pressure properly, as this will hold saddle sufficiently rigid.

The table clamping levers are located in front of saddle and should always be clamped when longitudinal movement is not required. The knee clamping lever is at the left side of knee, leave clamped at all times unless the knee is in operation.

IX REMOVING TABLE:

Remove the table as follows: hand wheel, dial holder, bearing bracket, turn the lead screw all the way, so that it can be removed. Complete all the steps then the table can be disassembled easily.

X REMOVING SADDLE:

Remove as follows: hand wheel, dial holder, bearing bracket, turn the leadscrew all the way, loosen set screw on the middle of saddle, take off the lead screw nut, and draw saddle gib out. The saddle can then be removed.

XI MOUNTING MOTOR AND SHIFTING BELTS FOR SPEEDS:

Motor is mounted on a plate hinged to the pulley housing. Release the belt set unit by turning the handle at the side of motor, then shift belts to proper speed as desired, then tighten the belt set unit. A speed change chart is attached inside the pulley cover.

XII QUILL LOCK AND VERTICAL FEED:

The handle at the right lower corner of the head is quill lock. When vertical feed is not in use, set the handle bar to lock the quill and make the head more stable.

The micrometer depth stop is graduated in inches. By utilizing these simple graduations, it is possible to work very accurately to different depths. A lock nut under the micrometer nut assures that the micrometer nut is secured properly.

XIII QUILL FEED OF VERTICAL MILLING HEAD:

The vertical quill feed is controlled by the hand lever on right side of head.

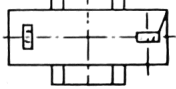

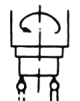
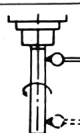
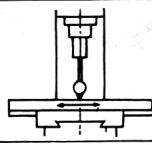
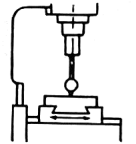
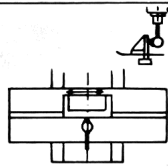
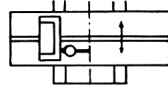
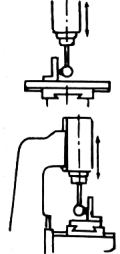
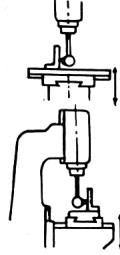
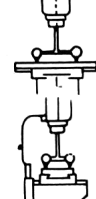
XIV VERTICAL HEAD AND TEE ADAPTER:

Vertical milling head can be tilted 90° on each side by loosening the four locking bolts.

Loosen two set bolts on the adapter, the vertical milling head can then be swivelled 120°; tighten the set bolts after swivelling.

FINAL INSPECTION RECORD

MODEL: OB
MFG. NO: 77479
DATE: _____

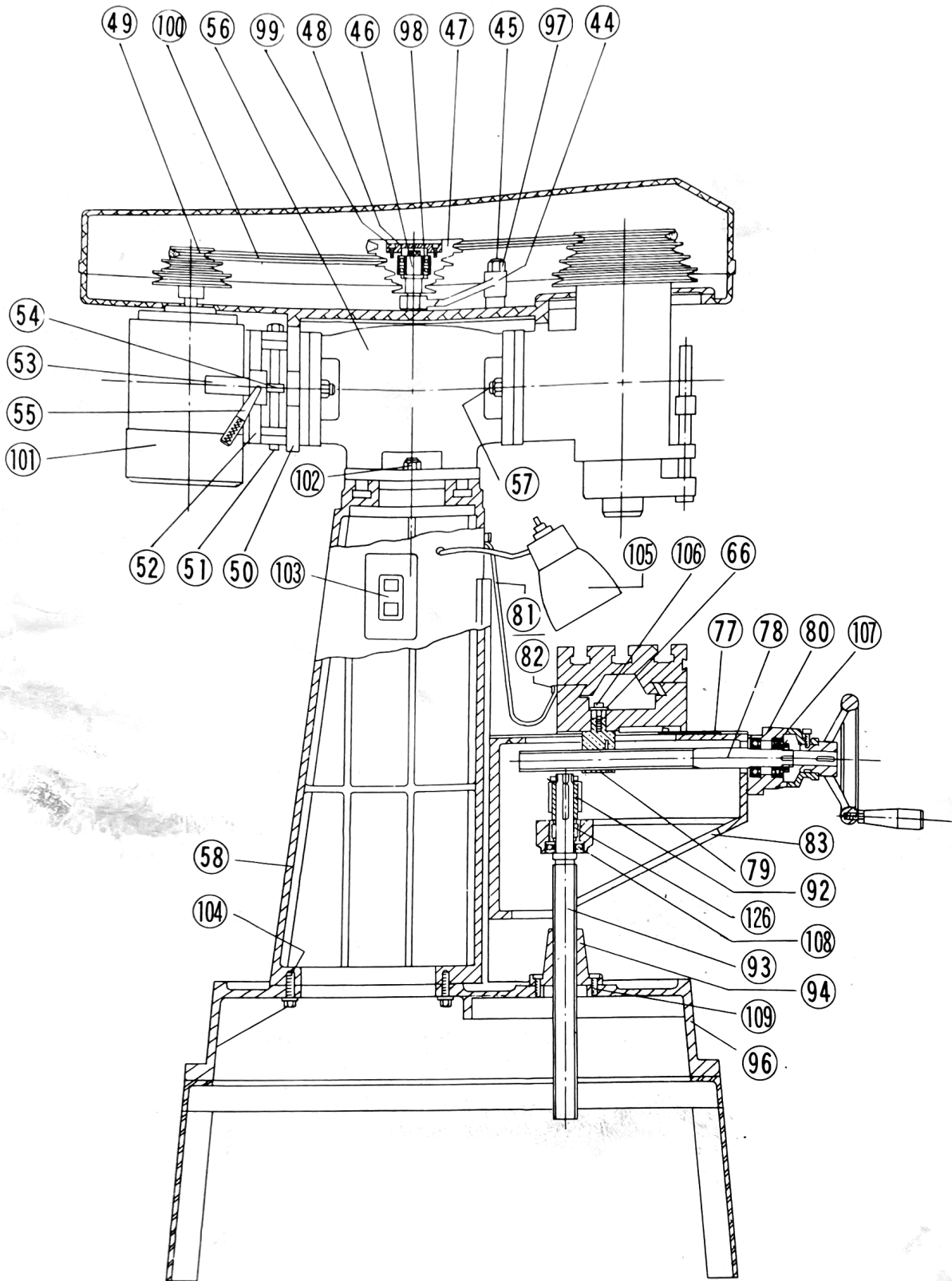
No.	Inspection Items	Figure	Tolerances	Measurements
	Straightness of upper surface of table		0.06/m (0.0024"/40")	0.03
			0.06/m (0.0024"/40")	0.03
2.	Spindle nose run-out		0.01 (0.0004")	0.004
3.	Run-out of spindle		0.02 (0.0008")	0.004
4.	Main spindle taper hole run-out		0.01 (0.0004")	0.005
			0.02 (0.0008")	0.02
5.	Parallelism of right and left movement of table to its upper surface		0.02 (0.0008")	0.005
6.	Parallelism of forward and backward movement of table to its upper surface		0.02 (0.0008")	0.015
7.	Parallelism of right and left movement of table to side of centre T slot		0.02 (0.0008")	0.02
8.	Squareness of forward and backward movement of table to side of centre T slot		0.02 (0.0008")	0.015
9.	Squareness of movement of main spindle head to upper surface of table		0.01 (0.0004")	0.015
			0.01 (0.0004")	0.02
10.	Squareness of upper surface of table to knee movement		0.02/300 (0.0008"/12")	0.01
			0.02/300 (0.0008"/12")	0.02
11.	Squareness of upper surface of table to centre line line of main spindle		0.02/300 (0.0008"/12")	0.005
			0.02/300 (0.0008"/12")	0.02

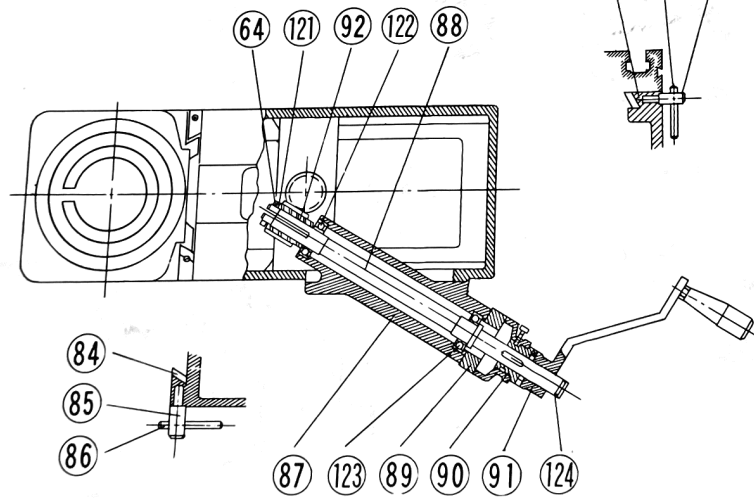
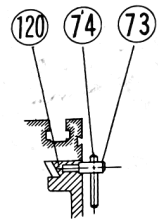
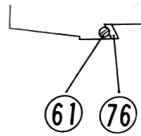
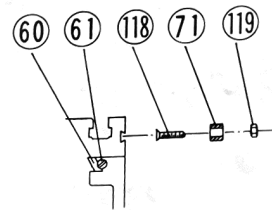
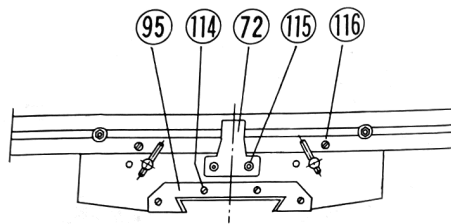
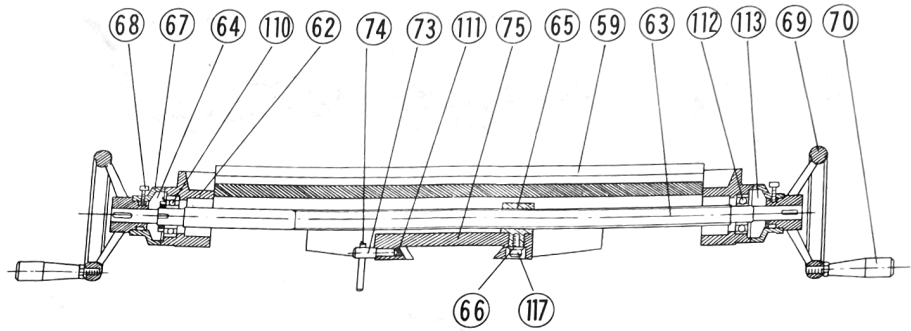
Revised and issued by Q.C Department

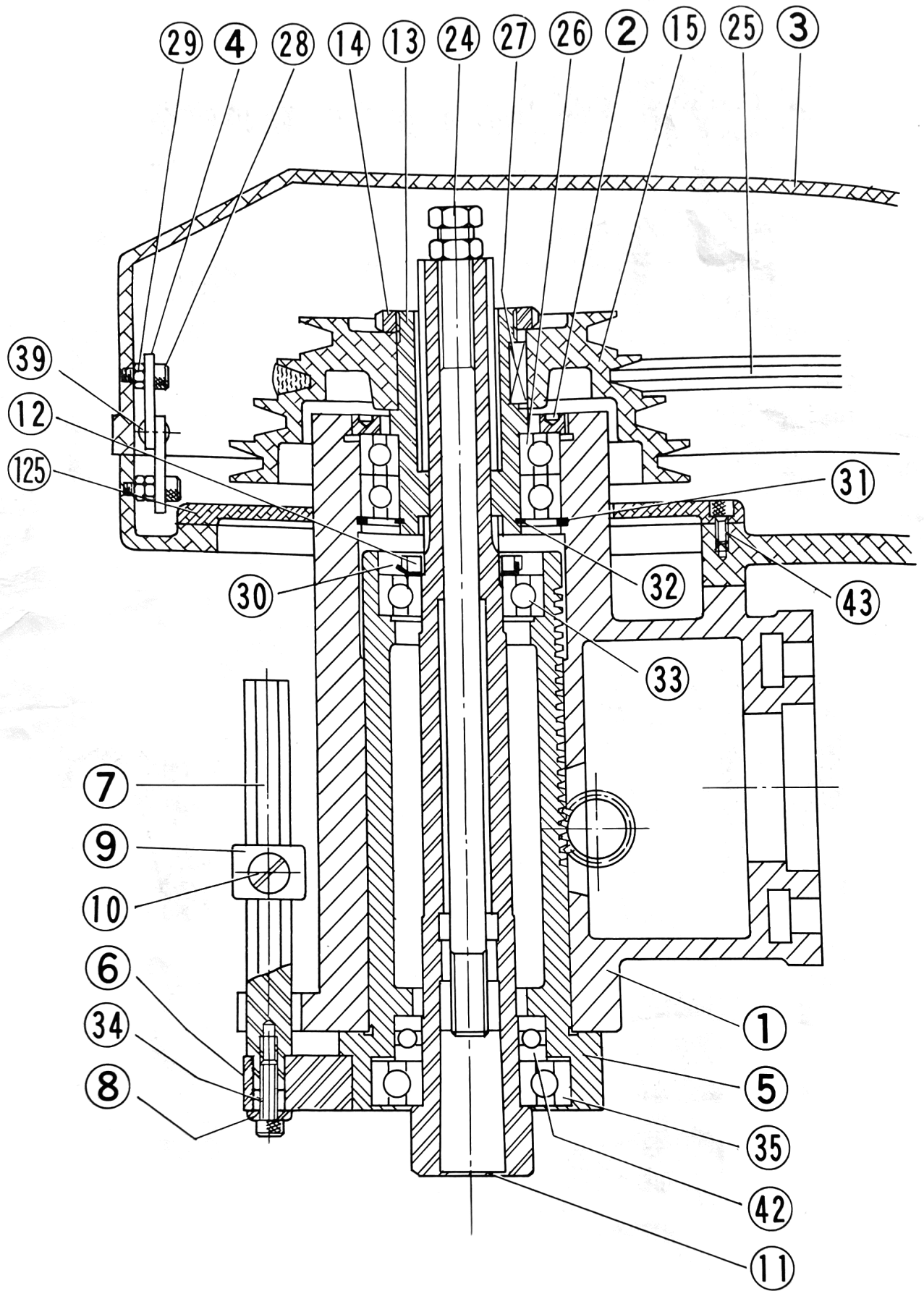
Q C Superintendent

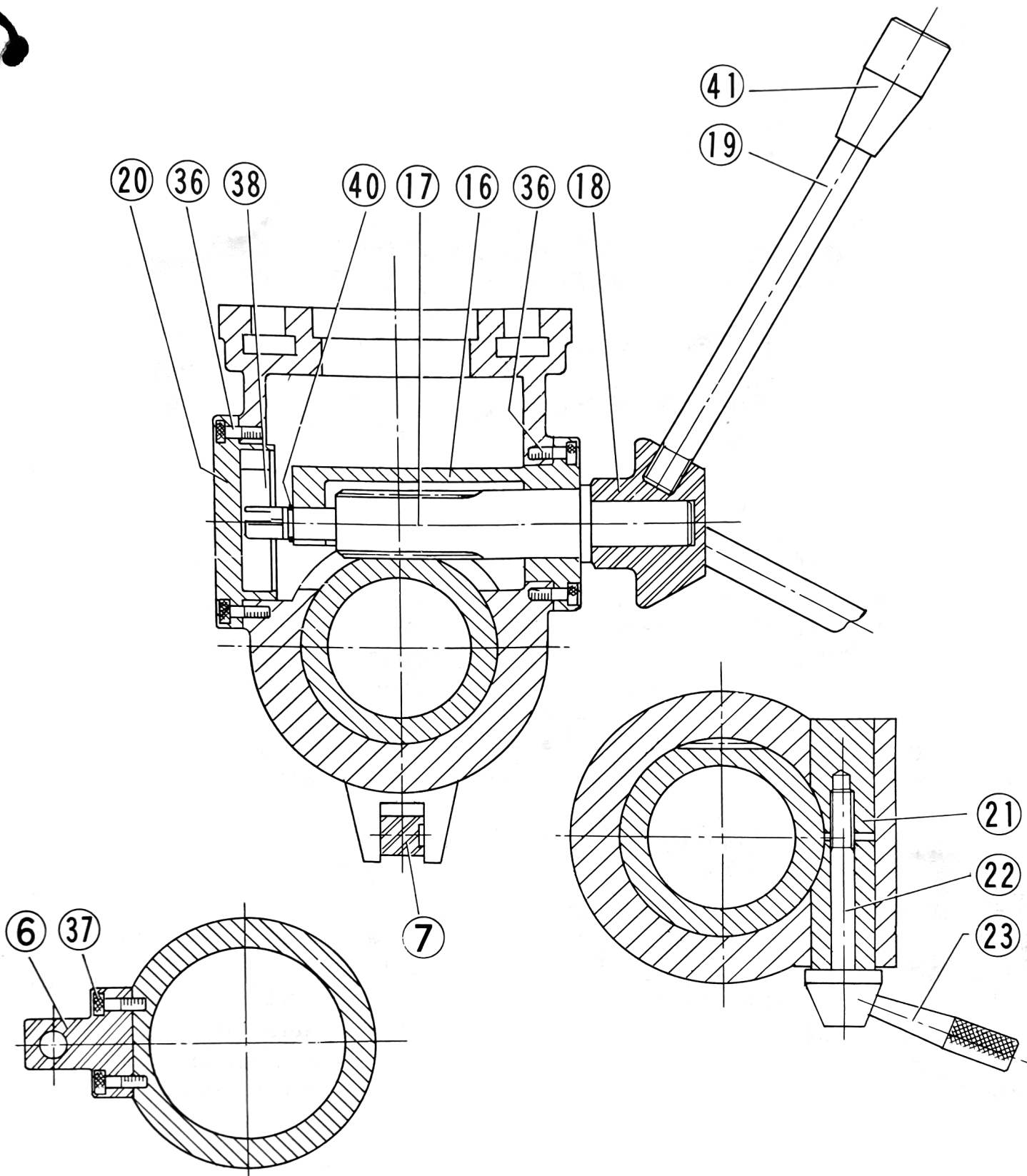
Q C Inspector

— 5 — *W. H. Wang* *L. E. Lion*









PART LIST

S/N	P/N	PART NAME	S/N	P/N	PART NAME
1	MCH-1	VERTICAL MILLING HEAD	31	H-75	SNAP RING
2	MCH-1a	BEARING LOCK NUT	32	S-45	SNAP RING
3	MCH-2	BELT HOUSING COVER	33	6206ZZ	BEARING
4	MCH-2a	PULLEY COVER SUPPORT- ING ARM	34	D 1/4" x 5/8"	SCREW
5	MCH-3	QUILL	35	6207ZZ	BEARING
6	MCH-4	SCALE SEAT	36	M5x12	SCREW
7	MCH-5	VERTICAL DEPTH SCALE	37	M5x16	SET SCREW
8	MCH-6	SCALE SET BLOCK	38	STD	SPRING
9	MCH-7	VERTICAL DEPTH STOP BLOCK	39	ø5x15	RIVET
10	MCH-7a	SCREW	40	S-12	SNAP RING
11	MCH-8 ⁸ _{8a}	VERTICAL SPINDLE (M.T #3 OR R-8)	41	STD	PLASTIC HANDLE GLOVE
12	MCH-9	BEARING LOCK NUT	42	2907	THRUST BEARING
13	MCH-10	SPINDLE TRANSMISSION SLEEVE	43	M5	SCREN
14	MCH-11	PULLEY LOCK NUT	44	MCH-21	SWIVELLING ARM
15	MCH-12	SPINDLE PULLEY	45	MCH-22	SWIVELLING STUD
16	MCH-13	ELEVATING SHAFT SLEEVE	46	MCH-23	PULLEY PINION SHAFT
17	MCH-14	QUILL PINION SHAFT	47	MCH-24	VEE BELT PULLEY
18	MCH-15	HAND BAR ADAPTER	48	MCH-25	PULLEY SHAFT COVER
19	MCH-16	HAND BAR	49	MCH-26	MOTOR PULLEY
20	HCH-17	ELEVATING SHAFT SETTING COVER	50	MCH-27	MOTOR MOUNT
21	MCH-18	QUILL LOCK BLOCK	51	MCH-28	MOTOR SUSPENSION PIVOT
22	MCH-19	QUILL LOCK BOLT	52	MCH-29	MOTOR MOUNT
23	MCH-19a	LOCKING BOLT HANDLE	53	MCH-30	BELT SET UNIT
24	MCH-20	DRAW BAR	54	MCH-30a	SET UNIT PIN
25	A-34	VEE BELT	55	MCH-31	SET UNIT HANDLE
26	6009zz	BEARING	56	MCH-32	VERTICAL HEAD ADAPTER
27	7x7x24	KEY	57	MCH-33	ADAPTER SET BOLT
28	M5	SCREW	58	MCC-1	COLUMN
29	M5	NUT	59	MCT-1	TABLE
30	ø30	LOCKING SPRING WASHER	60	MCT-2	TABLE GIB
			61	MCT-3	GIB ADJUSTING SCREW
			62	MCT-4	LONGITUDINAL LEAD SCREW BEARING BRACKET

PART LIST

S/N	P/N	PART NAME	S/N	P/N	PART NAME
63	MCT-5	LONGITUDINAL LEAD SCREW	93	MCK-11	ELEVATING LEAD SCREW
64	MCT-6	LOCK NUT	94	MCK-12	ELEVATING LEAD SCREW SET NUT
65	MCT-7	LONGITUDINAL FEED NUT	95	MCK-13	CHIP GUARD
66	MCT-8	WASHER	96	MCB-1	BASE
67	MCT-9	DIAL	97	5/8"	NUT
68	MCT-9a	DIAL POSITIONING SCREW	98	6203zz	BEARING
69	MCT-10	HAND WHEEL	99	M5×10	SCREW
70	MCT-11	HANDLE BAR SLEEVE	100	B-31	VEE BELT
71	MCT-12	ADJUSTING SCREW BUSHING	101	3/4 HP	MOTOR
72	MCT-13	TABLE STOPPER	102	1/2"	NUT
73	MCT-14	TABLE LOCK SCREW	103	STD	SWITCH
74	MCT-15	HANDLE BAR	104	D 3/8" × 1 1/4"	BOLT
75	MCS-1	SADDLE	105	STD	ILLUMINATION
76	MCS-2	SADDLE GIB	106	M5×30	SCREW
77	MCS-3	CHIP GUARD	107	6204zz	BEARING
78	MCS-4	CROSS FEED LEAD SCREW	108	51103	THRUST BEARING
79	MCS-5	CROSS FEED NUT	109	D 1/4" × 3/4"	SCREW
80	MCS-6	CROSS FEED BEARING BRACKET	110	6204zz	BEARING
81	MCS-7	CHIP GUARD	111	D 1/4"	COPPER BLOCK
82	MCS-8	CHIP GUARD CLAMPING FIXTURES	112	6303zz	BEARING
83	MCK-1	KNEE	113	S-17	SNAP RING
84	MCK-2	KNEE GIB	114	D 3/16" × 3/8"	SCREW
85	MCK-3	KNEE LOCK SCREW	115	D 1/4" × 1/2"	SCREW
86	MCK-4	HANDLE BAR	116	STD	OIL FITTING
87	MCK-5	ELEVATING GEAR SHAFT SLEEVE	117	M5×12	SCREW
88	MCK-6	ELEVATING GEAR SHAFT	118	D 3/8" × 1"	SCREW
89	MCK-7	ELEVATING SUB-DIAL	119	3/8"	NUT
90	MCK-8	ELEVATING HANDLE CLUTCH	120	D 1/4"	COPPER BLOCK
91	MCK-9	HANDLE ARM	121	∅ 20	LOCKING SPRING WASHER
92	MCK-10	ELEVATING GEAR	122	6004zz	BEARING
			123	6004zz	BEARING
			124	S-18	SNAP RING
			125	MCH-34	COVER
			126	TA202820	NEEDLE BEARING

MAX ADS
SPACE W/IS

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\$ 4.75. / SET