

OPERATION MANUAL

TROUBLESHOOTING

Symptom	Possible Cause	Possible Solution
Spindle does not fully retract.	1. Poorly adjusted return spring. 2. Worn return spring.	1. Increase return spring tension. 2. Replace return spring
Spindle switch does not work.	1. Shorted/disconnected wiring.	1. Inspect wiring connections. Replace/repair as necessary.

Power Feed

Powerfeed does not move table or is slipping.	1. Table locked. 2. Drive selector not engaged. 3. Sheared pin. 4. Gears not meshing or teeth missing. 5. Motor shaft and gear shaft not engaged	1. Unlock table locks. 2. Select speed, engage drive selector. 3. Replace pin. 4. Check gears and adjust/replace. 5. Replace clutch.
Operates at high speed only or is inconsistent.	1. Rapid micro switch is stuck. 2. V.R. does not work properly. 3. Wiring harness unplugged from circuit board	1. Lightly tap on it to lower it. 2. Test/repair/replace 3. Reconnect wiring harness.

Digital Readout Unit (DRO)

DRO does not give reading.	1. DRO is not turned on/plugged in. 2. Shorted/disconnected wiring/plugs..	1. Press DRO ON/Power button/plug in. 2. Inspect circuit boards, sensors, plugs, and wiring connections. Replace/repair as necessary.
DRO reading is incorrect.	1. Initial reading is incorrect. 2. Sensor has gone bad. 3. Spacing between sensor & scale is incorrect.	1. Tare/zero/reset DRO at beginning point. 2. Test/replace sensor as necessary. 3. Adjust spacing between sensor and scale

Lamp

Lamp will not light.	1. Power not turned on. 2. Bulb is burned out. 3. Short in wiring or wired incorrectly	1. Press switch/button on lamp or control panel. 2. Replace bulb. 3. Trace and test wiring. Fix any errors.
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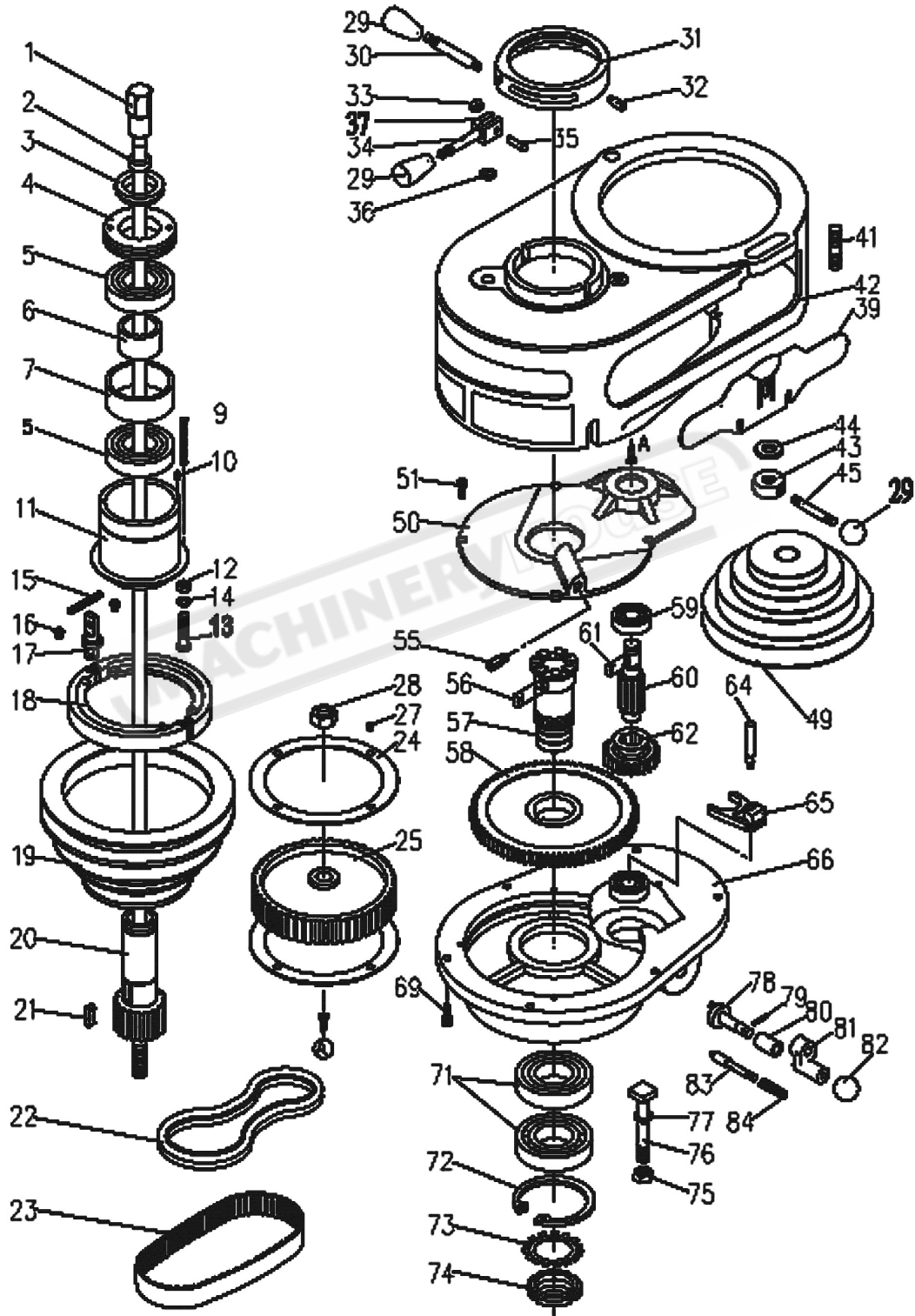
SPARE PARTS SECTION

The following section covers the spare parts diagrams and lists that were current at the time this manual was originally printed. Due to continuous improvements of the machine, changes may be made at any time without notification.

HOW TO ORDER SPARE PARTS

1. Have your machines model number, serial number & date of manufacture on hand, these can be found on the specification plate mounted on the machine
2. A scanned copy of your parts list/diagram with required spare part/s identified
3. Go to www.machineryhouse.com.au/contactus and fill out the enquiry form attaching a copy of scanned parts list.

BM-23A BELT DRIVE HEAD





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Parts List for BM-23A Head Assembly

Index No.	Part No.	Description	Size	Q'ty
1	LA-072	Draw Bar	NT30 (W7/16-20UNF)	1
2	JTM4VS-A002B	Draw Bar Washer		1
3	LA-071	Upper Bearing Lock Nut		1
4	LA-070	Bearing Sleeve Lock Nut		1
5	BB-6207ZZ	Ball Bearing		1
6	LA-068	Upper Bearing Spacer (small)		1
7	LA-069	Upper Bearing Spacer (large)		1
9	LA-169	Compression Spring		1
10	TS-1520041	Set Screw	M3x10	2
11	LA-066	Spindle Pulley Bearing Sleeve		1
12	TS-0571021	Hex Jam Nut	5/16	1
13	TS-0720081	Lock Washer	5/16	1
14	LA-034	Brake Ring Screw		1
15	LA-036	Spring		2
16	BUTW1814	Screw W1/8x1/4		1
17	LA-037	Brake Lock Stud		1
18	LA-035	Brake Assembly		1
19	LA-065	Spindle Pulley		1
20	LA-064	Spindle Pulley Hub		1
21	JTM1-021	Key	8x7x24	1
22	VB-A33	V-belt	A-33	1
23	VB225L100	Timing Belt	2252x100	1
24	LA-027	Timing Belt Flange		1
25	LA-028	Timing Belt Pulley		1
27	JTM1-C27	Flat Head Screw	W1/8x1/4	1
28	TS-0571072	Hex Jam Nut	5/8-18UNF	1
29	LA-006	Plastic Ball	W3/8	2
30	LA-074	Spindle Clutch Lever		1
31	LA-073	Cam Ring		1
32	JTM1-032	Cam Ring Pin		1
33	JTM1-C33	E-Ring	E-5.5	1
34	LA-039	Brake Lock Handle		1
35	LA-038	Brake Lock Pin		1
36	TS-0680061	Washer	W1/2	1
37	JTM1-037	Spindle Speed Plate		1
39	JTM1-039	Belt Guard Assembly		2
41	LA-012	Motor Mount Studs		2
42	LA-015	Belt Housing		1
43	LA-007	Motor Lock Nut		1
44	LA-008	Washer		1
45	LA-009	Motor Lock Nut Handle		1
49	LA-011	Motor Pulley		1
50	LA-013	Gear Housing Cover		1
51	JTM1-C51	Hex Socket Cap Screw	M5x14	1
55	JTM1-055	Oil Cup		1
56	JTM1-C56	Key	8x7x15	1
57	LA-062	Spindle Gear Hub		1
58	LA-061	Spindle Bull Gear Assembly		1
59	BB-6203ZZ	Ball Bearing	6203ZZ	2
60	LA-026	Shaft		1
61	JTM1-061	Key	5x5x15	1
62	LA-025	Gear		1
64	LA-032	Dowel Pin		1
65	LA-031	Back Gear Shifter Fork		1
66	LA-014	Gear Housing		1

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Parts List for BM-23A Head Assembly Cont.

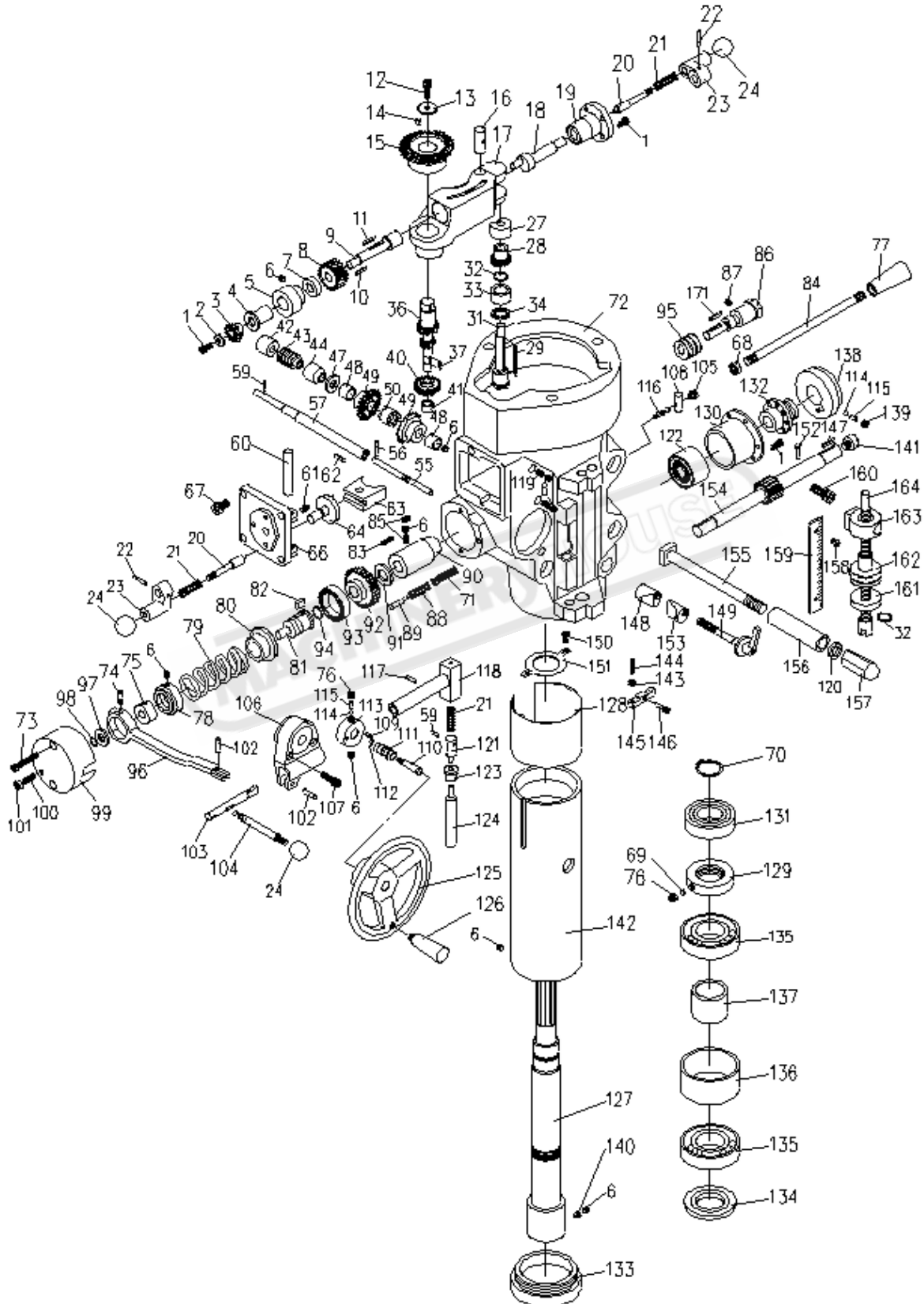
Index No.	Part No.	Description	Size	Q'ty
69	TS-1503041	Hex Socket Cap Screw	M6x16	1
71	BB-6208Z	Ball Bearing	6208Z	2
72	JTM1-C72	Snap Ring	R-80	1
73	JTM1-C73	Lock Washer		1
74	LA-059	Bearing Lock Nut		1
75	JTM1-C75	Hardened Nut	W7/16	1
76	LA-045	T-Bolt		1
77	JTM1-C77	Bolt Washer	W7/16	1
78	LA-001	Shift Crank		1
79	JTM-C79	Spring Pin	Ø3x20	1
80	LA-044	Back Gear Shift Bushing		1
81	LA-003	Shaft Crank Handle		1
82	LA-006	Plastic Ball		2
83	LA-004	Gearshift Plunger		1
84	LA-005	Compression Spring		1





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Spindle Assembly



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List for Spindle Assembly**Index**

No.	Part No.	Description	Size	Qt
1	TS-1533042	Screw	M5×10	6
2	HA-002	Bevel Pinion Washer		1
3	LA-166A	Feed Gear		1
4	LA-161	Shaft Sleeve		1
5	LA-162	Worm Cradle Bushing		1
6	TS-1523011	Set Screw	M6×6	9
7	LA-163	Worm Cradle Bushing		1
8	LA-164	Feed Drive Worm Gear		1
9	LA-165	Worm Gear Shaft		1
10	HA-010	Worm Shaft Key	3×3×8	6
11	LA-166A	Key	3×3×20	1
12	HA-012	Locknut	M6×16	1
13	LA-166A	Washer		1
14	HA-014	Cluster Gear Key	3×3×8.5	1
15	LA-154	Feed Reverse Bevel Gear		1
16	LA-167	Feed Engage Pin		1
17	LA-166	Worm Gear Cradle		1
18	LA-066	Cam Rod		1
19	LA-002	Shift Sleeve		1
20	LA-004	Plunger		2
21	LA-005	Spring		3
22	HA-022	Spring Pin	3×22	2
23	LA-033	Cam Rod		1
24	LA-006	Plastic Ball		6
27	LA-147	Upper Bushing		1
28	LA-144	Cluster Gear Assembly		1
29	HA-029	Cluster Gear Key	3×3×45	1
31	LA-143	Cluster Gear Shaft		1
32	HA-032	Snap Ring		2
33	LA-142	Bevel Gear Bushing		1
34	LA-141	Thrust Spacer		1
36	LA-156	Feed Drive Gear		1
37	LA-166A	Key		1
40	LA-157	Feed Drive Gear		1
41	HA-041	Needle Bearing		1
42	LA-168	Bushing		1
43	LA-139	Worm		1
44	LA-138	Feed Worm Shaft Bushing		1
47	LA-137	Bevel Gear Thrust Spacer		1
48	LA-134	Bushing		2
49	LA-135	Feed Worm Shaft Bushing		2
50	LA-136	Feed Reverse Clutch		1
55	LA-132	Reverse Clutch Rod		1
56	HA-056	Spring Pin	3×20	1
57	LA-133	Feed Worm Shaft		1
59	HA-059	Spring Pin	3×12	2
60	LA-150	Feed Worm Shaft		1
61	TS-1522031	Set Screw	M5×10	1
62	HA-062	Key	3×3×15	2
63	LA-149	Feed Gear Shaft Fork		1
64	LA-151	Cluster Gear Shift Crank		1
66	LA-148	Cluster Gear Cover		1
67	TS-1504011	Hex Socket Cap Screw	M8×10	4
68	TS-0561031	Hex Nut	3/8"	1
69	HB1291	Lock Washer		1
70	RINS30	Snap Ring		1

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List for Spindle Assembly**Index**

No.	Part No.	Description	Size	Qty
71	HA-193	Spring	10×20	1
72	LA-016	Quill Housing		1
73	TS-1502081	Hex Socket Cap Screw	M5×35	2
74	LA-081	Clutch Ring Pin		2
75	LA-080	Clutch Ring		1
76	TS-1524011	Set Screw	M8×8	1
77	LB-017	Plastic Ball		1
78	LA-082	Overload Clutch Lockout		1
79	LA-083	Safety Clutch Spring		1
80	LA-084	Overload Clutch		1
81	LA-085	Overload Clutch Sleeve		1
82	LA-090	Key		1
83	TS-1532052	Pan Head Machine Screw	M4×16	3
84	LA-105	Handle		1
85	TS-1523031	Set Screw	M6×10	2
86	LA-019	Worm Shaft		1
87	LA-173	Set Screw		1
88	LA-169	Spring		1
89	LA-089	Spring Plunger		1
90	LA-123	Pinion Shaft Bushing		1
91	LA-122	Spacer		1
92	LA-087	Overload Clutch Worm Gear		1
93	LA-086	Overload Clutch Ring		1
94	LA-094	Snap Ring		1
95	LA-018	Worm Gear		1
96	LA-079	Trip Lever		1
97	LA-078	Washer		1
98	LA-098	Snap Ring		1
99	LA-076	Clutch Arm Cover		1
100	TS-1523051	Set Screw	M6×10	1
101	HA-101	Locknut		1
102	LA-077	Pin		1
103	LA-091	Cam Rod		1
104	LA-100	Trip Handle		1
105	LA-124	Screw		1
106	LA-092	Feed Trip Bracket		1
107	TS-1503051	Hex Socket Cap Screw	M6×20	2
108	LA-114	Plunger		1
109	HA-109	Key	3×3×10	1
110	LA-130	Feed Reverse Knob Stud		1
111	LA-131	Reverse Knob		1
112	HA-112	Snap Ring		1
113	LA-129	Handwheel Clutch		1
114	SB-3/16	Steel Ball	3/16"	2
115	HA-115	Spring		2
116	LA-113	Lever		1
117	HA-117	Spring Pin		1
118	LA-093	Cam Rod Sleeve Assembly		1
119	TS-1523011	Set Screw	M6×6	2
120	TS-0680061	Washer	1/2"	1
121	LA-095	Trip Plunger		1
122	LA-102	Clock Spring		1
	LA-102/3	Clock Spring Assembly		1
123	LA-121	Bushing		1
124	LA-097	Feed Trip Plunger		1

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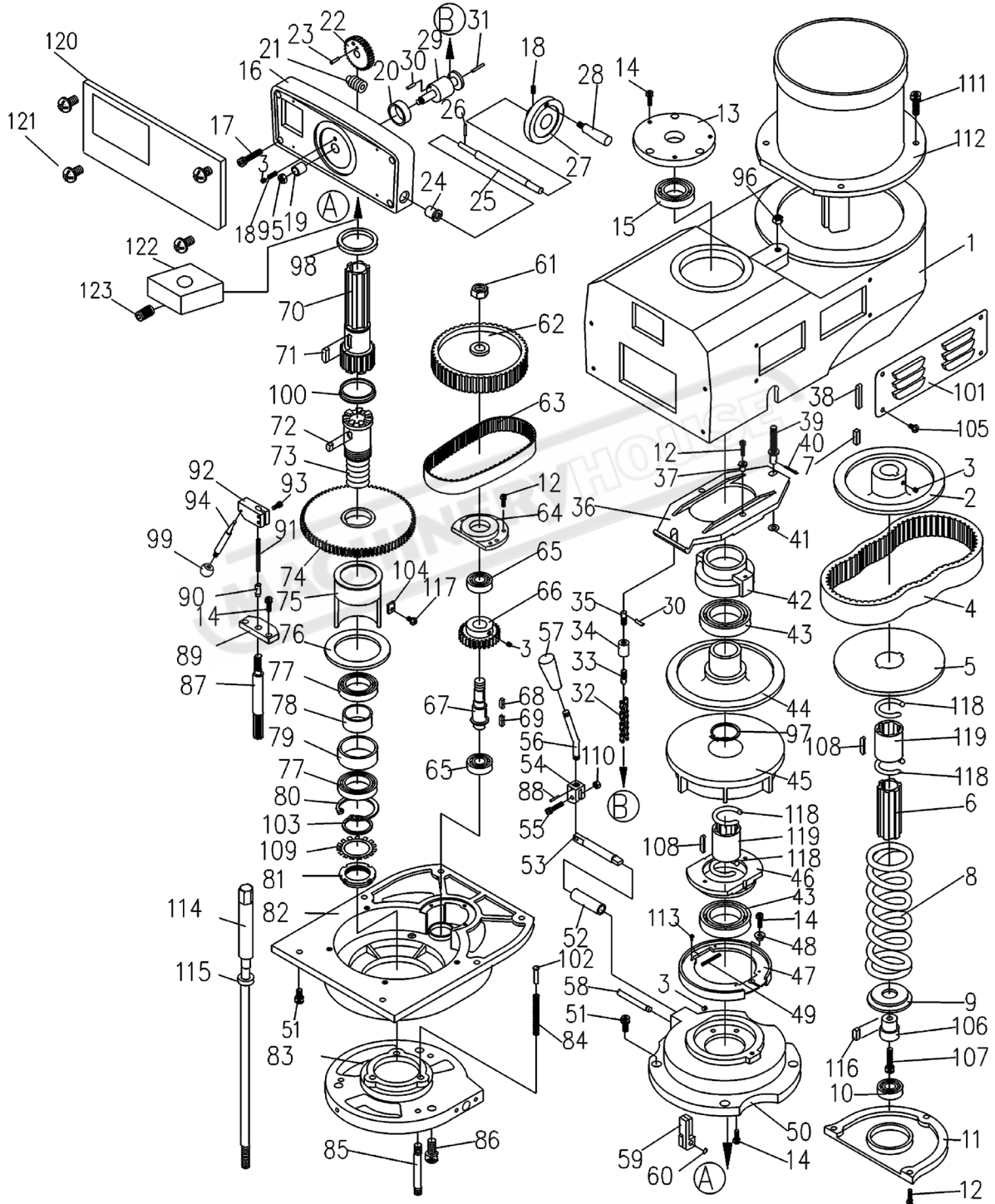
Parts List for Spindle Assembly**Index**

No.	Part No.	Description	Size	Qty
125	LA-126	Handwheel		1
126	LA-125	Handle		1
127	LA-050A	Spindle		1
128	LA-060	Quill Skirt		1
129	LA-048	Lock Nut		1
130	LA-103	Spring Cover		1
131	BB-6206ZZ	Ball Bearing	6206ZZ	1
132	LA-104	Hub Sleeve		1
133	LA-051	Nose Piece		1
134	LA-052	Spindle Shield		1
135	BB-7207C	Ball Bearing	7207C	2
136	LA-054	Bearing Spacer (large)		1
137	LA-053	Bearing Spacer (small)		1
138	LA-106	Hub	5/16"×1/4	1
139	TS-0270021	Set Screw		1
140	LA-172	Set Screw		1
141	LA-107	Pinion Shaft Hub		1
142	LA-058	Quill		1
143	TS-154021	Hex Nut	M4	1
144	TS-1521071	Set Screw	M4×20	1
145	LA-098	Feed Trip Lever		1
146	LA-099	Trip Lever Pin		1
147	HA-171	Key		2
148	LA-111	Quill Lock Sleeve		1
149	LA-109	Lock Handle		1
150	HA-150	Screw	M5×10	2
151	LA-057	Felt Washer		1
152	LA-101A	Pin		1
153	LA-110	Quill Lock Sleeve		1
154	LA-101	Quill Pinion Shaft		1
155	LA-043	T-Bolt Assembly		4
156	LA-046	Spacer		4
157	LA-040	Lock Nut		4
158	HA-158	Screw	M4×5	2
159	LA-118	Micrometer Scale		1
160	TS-0209032	Screw	3/8"-24UNF3/4	1
161	LA-115	Quill Micro-Stop Nut		1
162	LA-116	Micrometer Nut		1
163	LA-117	Quill Stop Knob		1
164	LA-112	Quill Micro-Screw		1



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BM-53VE Upper Head Parts List



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BM-53VE Upper Head Parts List**Index**

No.	Part No.	Description	Size	Qty.
1	VS-001	Upper Housing		1
2	VS-002	Motor Pulley		1
	VS-044A	Motor Pulley Bushing (not shown)		1
3	TS-1523011	Set Screw	M6x6	4
4	VS-004	Belt		1
5	VS-005	Motor Pulley Disk		1
6	VS-006	Motor Pulley Shaft		1
7	KEY7725	Key	7x7x25	1
8	VS-008	Motor Pulley Spring		1
9	VS-009	Spring Stop Washer		1
10	BB-6206ZZ	Ball Bearing	6206ZZ	1
11	VS-011A	Motor Pulley Cover		1
12	TS-1502051	Hex Socket Cap Screw	M5x20	8
13	VS-013	Cover		1
14	TS-1503041	Hex Socket Cap Screw	M6x16	10
15	BB-6007ZZ	Ball Bearing	6007ZZ	1
16	VS-016	Dial Cover		1
17	TS-1503071	Hex Socket Cap Screw	M6x30	4
18	TS-1523041	Set Screw	M6x16	2
19	VS-019	Bushing		1
20	VS-020	Bushing		1
21	VS-021	Worm		1
22	VS-022	Worm Gear		1
23	VS-023	Spring Pin	5x10	2
24	VS-024	Bushing		2
25	VS-025	Dial Control Shaft		1
26	VS-026	Spring Pin	3x12	1
27	VS-027	Dial Wheel		1
28	VS-028	Wheel Handle		1
29	VS-029	Shaft		1
30	VS-030	Spring Pin	4x16	2
31	VS-031	Spring Pin	3x25	1
32	VS-032	Speed Change Chain		1
33	VS-033	Adjustment Stud		1
34	VS-034	Sleeve Nut		1
35	VS-035	Adjustment Stud		1
36	VS-036	Tilter		1
37	VS-037	Bushing		2
38	KEY6645	Key	6x6x45	1
39	VS-039	Regulating Screw		1
40	VS-040	Spring Pin	3/32x3/4	1
41	VS-041	Washer		1
42	VS-042	Support		1
43	BB-6010VV	Ball Bearing		2
44	VS-044N	Driven Pulley Assembly		1
45	VS-045N	Steady Pulley		1
46	VS-046	Bearing Cover		1
47	VS-047	Brake Lining		1
48	VS-048	Lock Screw		1
49	VS-049	Brake Spring		2
50	VS-050	Lower Housing Cover		1
51	TS-1504031	Hex Socket Cap Screw	M8x20	4
52	VS-052	Brake Shaft Sleeve		1
53	VS-053	Brake Lock Shaft		1
54	VS-054	Brake Lock Block		1



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BM-53VE Upper Head Parts List Cont.

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No.	Part No.	Description	Size	Qty.
55	TS-1503061	Hex Socket Cap Screw	M6x25	1
56	VS-056	Brake Lock Handle		1
57	VS-057	Plastic Ball		2
58	VS-058	Brake Finger Pivot Stud		1
59	VS-059	Brake Stud		2
60	VS-060	Snap Ring	S-8	2
61	TS-0561072	Nut	5/8-18UNF	1
62	VS-062	Timing Belt Pulley		1
63	VB225L100	Belt		1
64	VS-064	Bearing Retainer		1
65	BB-6203ZZ	Ball Bearing	6203ZZ	2
66	VS-066	Bull Gear		1
67	VS-067	Counter Shaft		1
68	VS-068	Key	5X5X15	1
69	VS-069	Key	5x5x18	1
70	VS-070	Spindle Pulley Hub		1
71	VS-071	Key	8x7x24	1
72	VS-072	Key	8x7x12	1
73	VS-073	Spindle Gear Hub		1
74	VS-074	Spindle Gear Assembly		1
75	VS-075	Rack Cup		1
76	VS-076	Washer		1
77	BB-6908ZZ	Ball Bearing		2
78	VS-078	Bearing Washer		1
79	VS-079	Bearing Washer		1
80	VS-080	Snap Ring		1
81	VS-081	Nut		1
82	VS-082	Lower Housing		1
83	VS-083	Fixed Clutch Bracket		1
84	VS-084	Spring		3
85	VS-085	Stud		3
86	TS-1506021	Hex Socket Cap Screw	M12x25	3
87	VS-087	Gear Shift Pinion		1
88	VS-088	Pin		1
89	VS-089	Detent Plate		1
90	VS-090	Detent Washer		1
91	VS-091	Spring		1
92	VS-092	Pinion Block		1
93	TS-1503011	Hex Socket Cap Screw	M5x14	2
94	VS-094	Pinion Crank		1
95	VS-095	Cap Nut		1
96	TS-0561031	Hex Nut	3/8	1
97	VS-097	Snap Ring		1
98	VS-098	Wave Washer		1
99	VS-099	Plastic Ball		1
100	VS-100	Snap Ring		1
101	VS-101B	Cover		2
102	VS-102	Spring Shaft		3
103	VS-103	Washer		1
104	VS-104	Copper Washer		2
105	VS-105	Screw	1/4x3/8	8
106	VS-107	Shaft		1
107	TS-1504061	Hex Socket Cap Screw	M8x30	1
108	VS-120	Key	6x4x32	2
109	VS-109	Lock Washer		1
110	TS-1540041	Hex Nut	M6	1
111	TS-0209051	Hex Socket Cap Screw	3/8x1	4

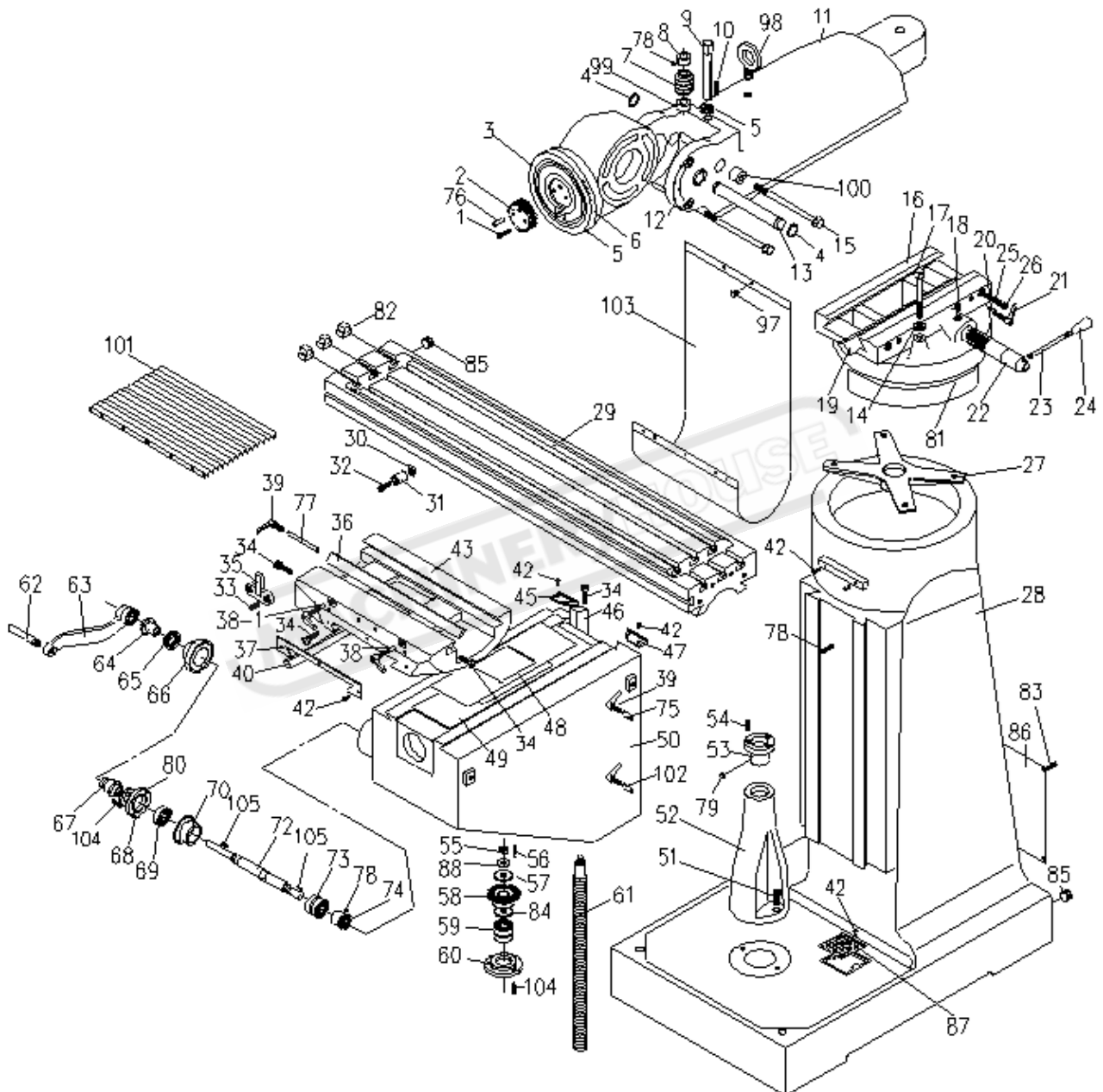


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BM-53VE Upper Head Parts List Cont.
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No.	Part No.	Description	Size	Qty.
112	4VS-112	Motor		1
113	VS-113	Oval Head Screw	1/8x1/4	4
114	JTM1-001VS	Draw Bar	#30/NT40	1
115	JTM4VS-A002B	Draw Bar Washer		1
116	VS-116	Key		1
117	VS-117	Oval Head Screw	3/16x1/2	1
118	VS-007	Snap Ring		4
119	VS-005A	Plastic Sleeve		2
120	JTM4VS-120	Speed Chart		1
121	JTM4VS-121	Pan Head screw	M4	4
122	JTM4VS-122	Sensor Block		1
123	TS-1521041	Set Screw	M4X10	1

MACHINERYHOUSE

HAFCO METALMASTER
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Base Assembly


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Parts List for Base Assembly**Index**

No.	Part No.	Description	Size	Qty
1	LB-001	Set Screw	M6×30	2
2	LB-023	Gear		1
3	LB-020	Ram Adapter		1
4	LB-004	Snap Ring		1
5	LB-005	Rivet	S-28	2
6	LB-027	Adapter Scale		5
7	LB-035	Worm		1
8	LB-036	Worm Thrust Washer		1
9	LB-034	Shaft		1
10	LB-100	Key	5×5×40	6
11	MB-026	Ram		1
12	LB-032	Angle Plate		1
13	LB-028	Adapter Pivot Stud		1
14	LB-031	Washer		4
15	LB-030	Adapter Locking Bolt	1/2"-12UNC	3
16	MB-009	Turret		1
	MB-00B	Turret Scale(not show)		1
17	LB-030	Lock Bolt	1/2"-12UNC	4
18	LB-041	Ram Pinion Screw	M8×1.25	1
19	LB-011	Ram/Turret Gib		1
20	LS-005E	Lock Plunger		2
21	LB-014	Ram Lock Bolt Handle	1/2"-12UNC	2
22	LB-015	Ram Pinion		1
23	LB-016	Handle	5/16"	1
24	LB-017	Black Plastic Ball		1
25	TS-0211131	Set Screw	3/8×2	2
26	TS-0561031	Hex Nut	3/8"	2
27	MB-008	Spider	1/2"-12UNC	1
28	MB-000	Column		1
29	JTM1-330A	Table		1
30	LT-027	Stop Nut	M8	2
31	LT-028	Table Stop		2
32	TS-1504071	Hex Socket Cap Screw	M8×35	2
33	TS-1504031	Hex Socket Cap Screw	M8×16	2
34	LK-002	Gib Adjusting Screw	5/16"	6
35	LS-003	Table Stop Bracket		1
36	LS-008	Saddle/Table Gib		1
37	LS-013	Felt Wiper		2
38	LS-005R	Table Lock Plunger-R	20mm	1
38-1	LS-005L	Table Lock Plunger-L	25mm	1
39	LS-011	Saddle Lock Handle	1/2"-12UNC	5
40	LS-001	Saddle/Knee Gib		1
41	LS-014	Wiper Plate		2
42	LS-042	Screw	3/16"×1/2"	16
43	MS-000	Saddle		1
44	LS-017A	Wiper Felt		2
45	LS-016A	Felt (left)		1
46	LK-001	Knee/Column Gib		1
47	LS-016A	Knee/Wiper Felt(right)		1
48	LK-007	Upper Chip Guard		1
49	LK-006	Upper Chip Guard		1
50	MK-000	Knee		1
51	TS-1505031	Hex Socket Cap Screw	M10×25	2
52	MK-012	Elevating Screw Housing		1
53	MK-014	Elevating Screw Nut		1
54	TS-1503041	Hex Socket Cap Screw	M6×16	8

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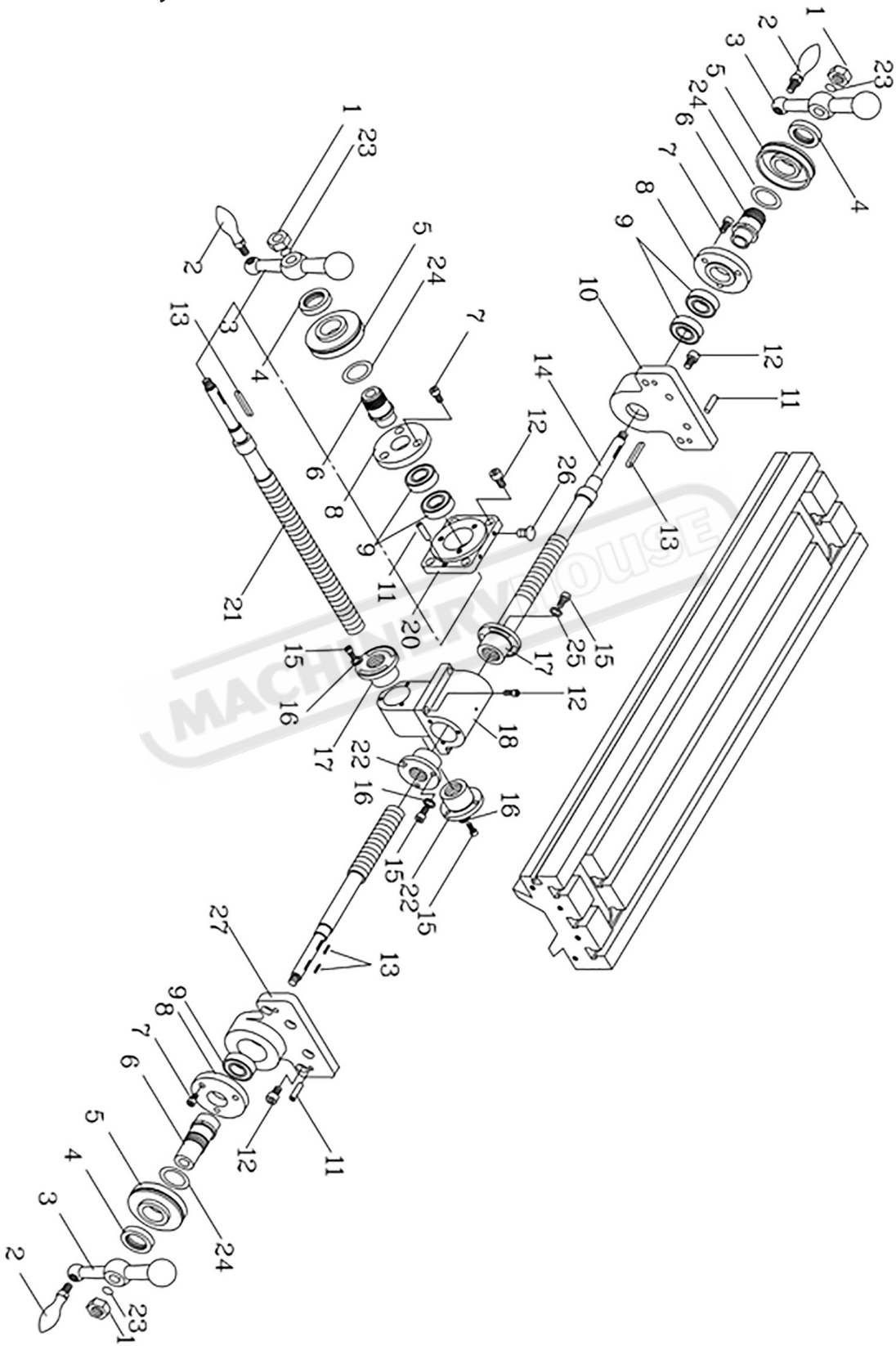
**Parts List for Base Assembly
Index**

No.	Part No.	Description	Size	Qty
55	TS-0561052	Hex Nut	1/2"-20UNF	1
56	LK-058	Key	4x4x30	1
57	LK-022	Washer		1
58	MK-021	Bevel Gear	36t	1
59	BB-6306ZZ	Ball Bearing	6306ZZ	2
60	MK-019	Bearing Retainer Ring		1
61	MK-016	Elevating Screw		1
62	LK-037	Handle		1
63	LK-036	Elevating Crank	9t	1
64	MB-035	Clutch Insert	9t	1
65	MB-034	Dial Lock Nut		1
66	MB-033	Dial		1
67	MB-032	Dial Holder		1
68	MB-030	Bearing Retainer Ring		1
69	BB-6204ZZ	Ball Bearing	6204ZZ	1
70	MB-029	Bearing Cap		1
71	MB-075	Key	4x4x18	2
72	MK-028	Elevating Shaft		1
73	BB-6204ZZ	Ball Bearing	6204ZZ	2
74	MK-024	Bevel Pinion	18t	1
75	LK-003	Plunger	29mmL	1
76	LK-081	Spring Pin	8x30	1
77	LS-010	Saddle Lock Plunger	140mm	1
78	TS-1515001	Hex Socket Cap Screw	M8x12	1
79	JTM4VS-B79	Oil Block	1/4"	1
80	JTM4VS-B80	Spacer		1
81	JTM4VS-B81	Turret Scale		1
82	JTM4VS-B82	Rubber T-Nut		6
83	MB-090	Round Head Screw	1/4"x3/8"L	4
84	MK-038	Bushing		1
85	VM-I40	Oil Plug	3/8"PT	3
86	MB-004	Cover		1
87	MB-041	Strainer Screen		2
88	JTM4VS-B88	Lock Washer		1
97	JTM4VS-B97	Cross Round Head Screw	M6x12	7
98	RIBW34	Hoisting Ring	3/4"	1
99	LB-036	Worm Thrust Washer		1
100	LB-033	Thrust Washer		1
101	LS-018	Pleated Way Cover (front)		1
102	LK-003	Lock Plunger	32 mm L	1
103	LS-017C	Flat Way Cover (rear)		1
104	TS-1503051	Hex Socket Cap Screw	M6x20	6
103	LS-017C	Flat Way Cover (rear-not shown)		1
	JTM4VS-TB	Tool Box Kit Complete (not shown)		1
105	KEY3320	Key	3x3x20	1



OPERATION MANUAL

Lead Screw Assembly



HAFCO METALMASTER

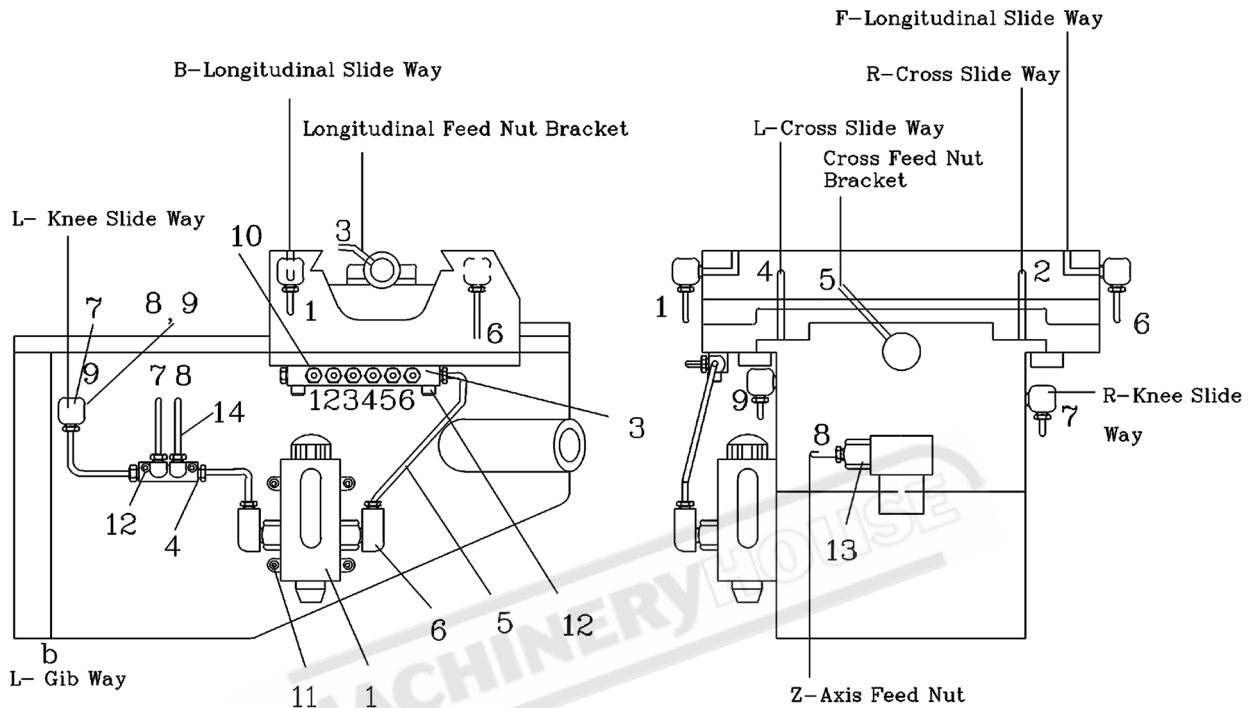
OPERATION MANUAL

Lead Screw Parts List

Index No.	Part No.	Description	Size	Qty.
1	D-1	Nut	1/2"-20NF	3
2	D-2	Handle		3
3	D-3	Ball Crank		3
4	D-4	Dial Lock Nut		3
5	D-5	Dial		3
6	D-6	Dial Holder		3
7	TS-1503031	Hex Socket Cap Screw	M6*12	9
8	D-90	Bearing Stop		3
9	BB-6204ZZ	Ball Bearing	6204ZZ	5
10	D-10	Bearing Bracket		2
11	D-11	Spring Pin	5*25	6
12	TS-1505031	Hex Socket Cap Screw		16
13	KEY3325	Key	3*3*25	3
14	D-14	Leadscrew		1
15	TS-1503061	Hex Socket Cap Screw		8
16	H-9	Washer		4
17	D-17	Feed Screw Nut		2
18	D-18	Feed Nut Bracket		1
20	D-20	Cross Bearing Bracket		1
21	D-21	Cross Feed Screw		1
22	D-22	Cross Feed Nut		2
23	D-23	Spring Washer	1/2"	3
24	D-24	Washer		3
25	D-25	Spring Washer		2
26	D-26	Screw		2
27	D-27	Bracket		1

OPERATION MANUAL

ONE SHOT LUBRICATION DIAGRAM



Index

No.	Part No.	Description	Size	Qty
1	CLA-8	Hand Oiler		1
2	ALMP-04	Aluminum Pipe	13.5	1
3	A-8	Oil Regulating Distributor		1
4	A-4	Oil Regulating Distributor		1
5	A-5	Flexible Steel Tube	4x550	1
6	PH-4011	Elbow Joint		2
7	PA-401	Elbow Joint		6
8	PA-4	Thimble Nut		20
9	PB-4	Thimble		20
10	PG-004	Union		1
11	JTM4VS-BUTW1458	Screw	M6 x14	4
12	TS-1502061	Hex Socket Cap Screw	M5x25	4
13	PD-401	Straight Joint		1
14	A-14	Nylon Piece	4x700	1