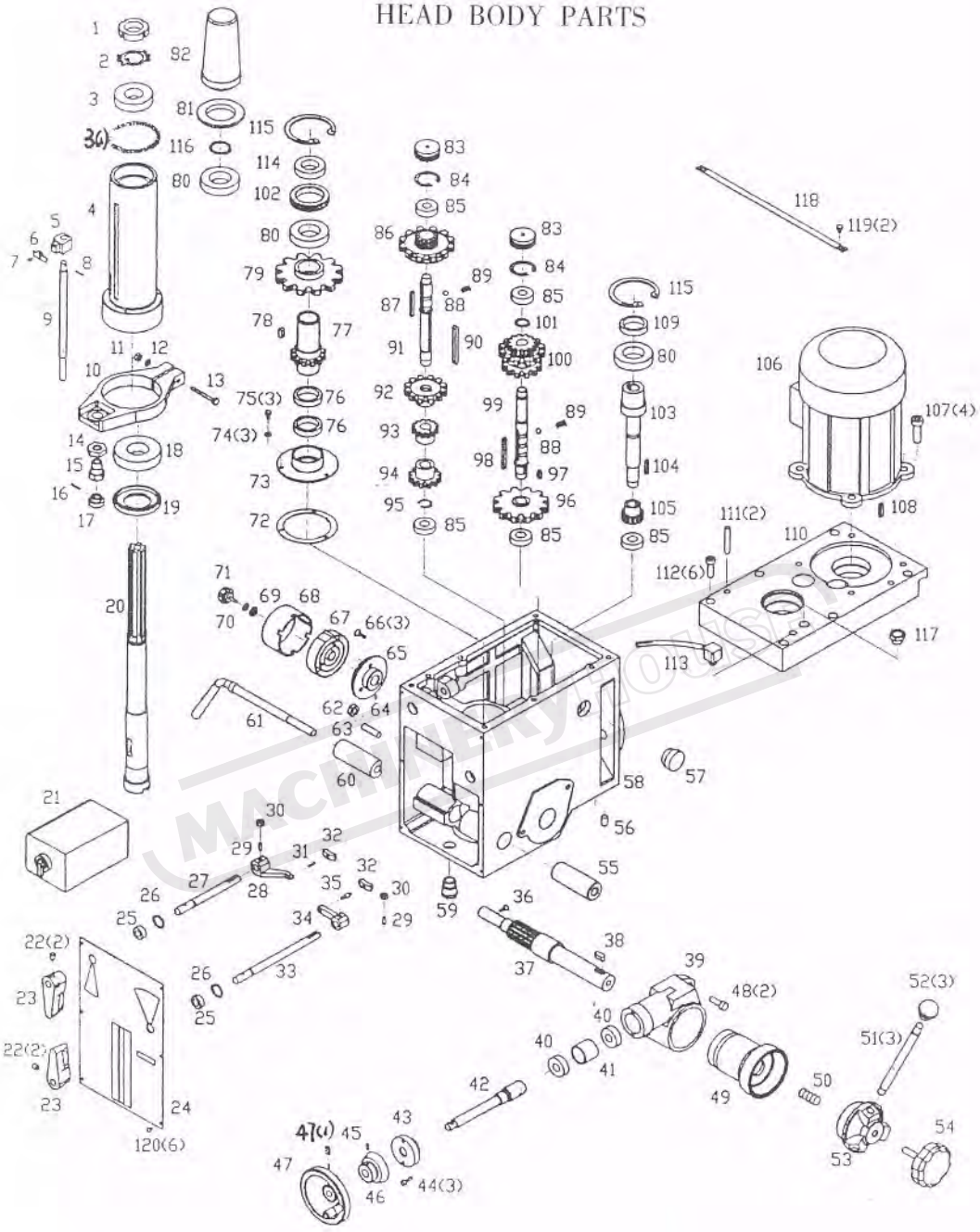
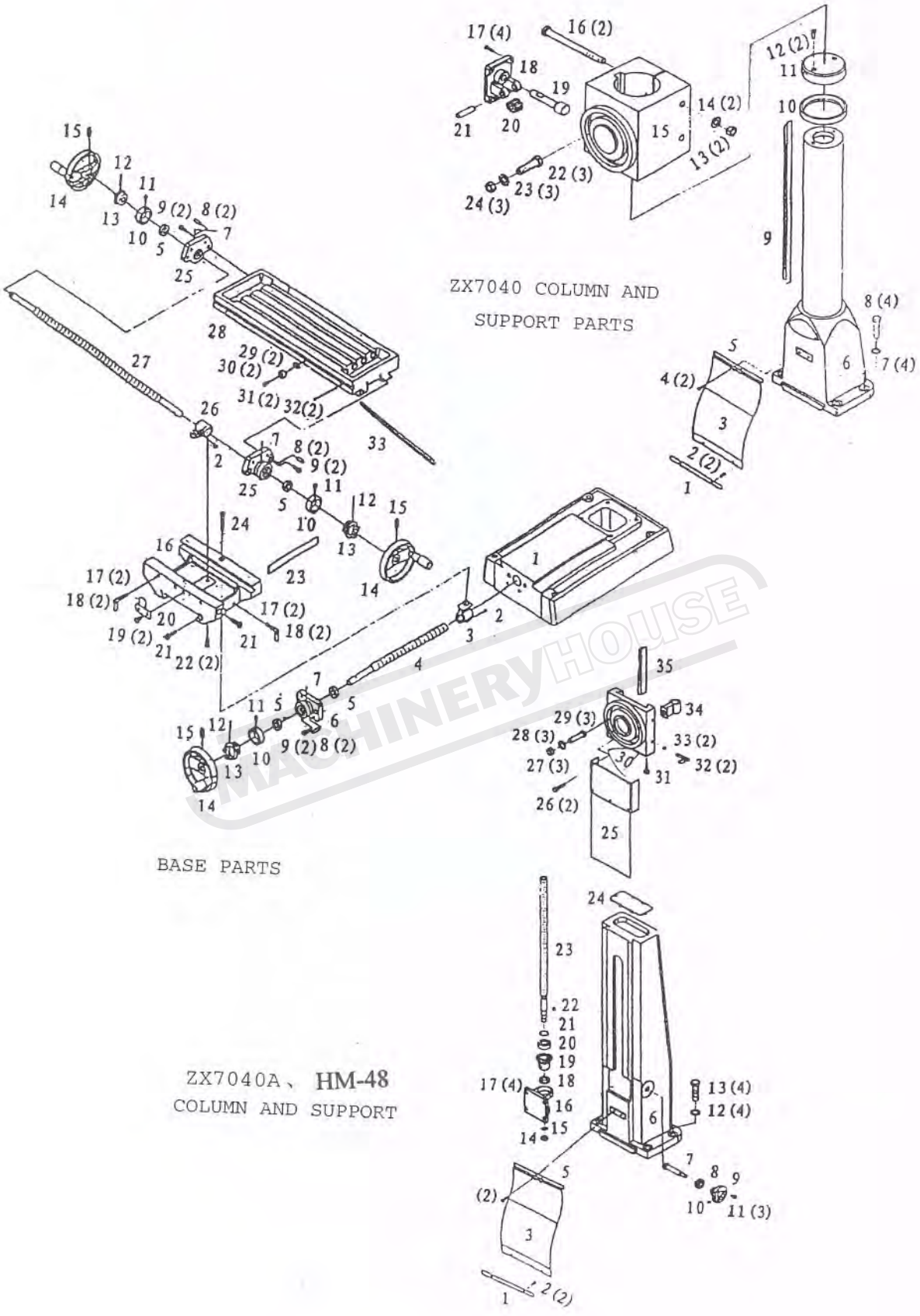
HEAD BODY PARTS



HM-48 ZX7040、ZX7040A、ZX7045 HEAD BODY

1	lock nut	41	separating ring	81	arbor bolt cover base
2	lock washer	42	worm shaft		
3	ball bearing	43	worm cover	82	arbor bolt cover
3(1)	washer	44	screw	83	cap
4	sleeve	45	screw	84	retainging ring
5	fixed bolt	46	graduation plate	85	ball bearing
6	scale-board	47	handle wheel	86	gear
7	screw	47(1)	screw	87	key
8	pin	48	screw	88	steel ball
9	graduated rod	49	worm gear	89	spring
10	feed base	50	spring	90	key
11	nut	51	handle rod	91	shaftIII
12	washer	52	handle ball	92	gear
13	screw	53	handle body	93	gear
14	nut	54	big ripple handle	94	gear
15	support	55	fixed tight collar	95	retainging ring
16	pin	56	oil cover	96	gear
17	knob	57	oil pointer	97	key
18	ball bearing	58	head body	98	key
19	bearing cup	59	fixed nut	99	shaft II
20	spindle	60	fixed tight collar	100	gear
21	electric box	61	handle rod	101	retainging ring
22	screw	62	nut	102	separating ring
23	speed lever	63	screw	103	motor shaft
24	name plate	64	pin	104	key
25	oill seal	65	spring base	105	gear
26	retainging ring	66	washer	106	motor
27	lever shaft(left)	67	spring plate	107	screw
28	lever(left)	68	spring cap	108	key
29	screw	69	washer	109	oil seal
30	nut	70	washer	110	head body cover
31	pin	71	small ripple handle	111	pin
32	lever bracket	72	airtight ring	112	screw
33	lever shaft(right)	73	airtight base	113	pipe radiator
34	lever(right)	74	washer	114	oil seal
35	pin	75	screw	115	retainging ring
36	screw	76	oil seal	116	retainging ring
37	pinion shaft	77	gear	117	oil cap
38	key	78	key	118	degree-meter
39	feed cover	79	gear	119	screw
40	ball bearing	80	ball bearing	120	screw


ZX7040 COLUMN AND SUPPORT PARTS
BASE PARTS
ZX7040A、 HM-48
COLUMN AND SUPPORT

BASE PARTS

1 base
2 screw
3 guide screw nut
4 protect board
5 ball bearing
6 guide screw support
7 oil cup
8 pin
9 screw
10 graduation plate
11 screw
12 pin
13 dial clutch
14 handwheel
15 screw
16 slip saddle
17 steel ball
18 lock handle
19 screw
20 stop lump
21 gib srew nut
22 bolt
23 gib strip
24 screw
25 right support
26 guide screw nut
27 guide screw
28 table
29 ladder-shaped nut
30 stop lump
31 screw
32 oil cup
33 gib strip screw

ZX7040 COLUMN AND SUPPORT PARTS

1 protect board slice
2 bolt
3 protect board
4 bolt
5 protect board fixed
6 column
7 washer
8 bolt
9 rack
10 link
11 column lid
12 washer
13 nut
14 washer
15 toraise and lower
16 bolt
17 screw
18 bracket
19 worm shaft
20 gear
21 shaft
22 bolt
23 washer
24 nut

ZX7040A HM-48 COLUMN AND SUPPORT PARTS

1 protect board slice
2 bolt
3 protect board
4 bolt
5 protect board fixed
6 column
7 gear shaft
8 ball bearing
9 head raise bracket
10 oil cup
11 screw
12 washer
13 bolt
14 round nut
15 tab washer for round nut
16 head raise bracket
17 screw
18 ball bearing
19 gear
20 ball bearing
21 retainger ring
22 key
23 guide screw
24 column nut
25 artidust plate
26 screw
27 nut
28 washer
29 boit
30 toruise and lower
31 screw
32 lock handle
33 steel ball
34 column nut
35 grib strip

⚠WARNING

Milling Machine Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

1. **Maintenance.** Make sure the mill is turned off and disconnect from the main power supply and make sure all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.
2. **Mill Condition.** Mill must be maintained for a proper working condition. Never operate a mill that has damaged or worn parts. Scheduled routine maintenance should performed on a scheduled basis.
3. **Leaving a Mill Unattended.** Always turn the mill off and make sure all moving parts have come to a complete stop before leaving the mill. Do not leave mill running unattended for any reason.
4. **Avoiding Entanglement.** Remove loose clothing, belts, or jewelry items. Never wear gloves while machine is in operation. Tie up long hair and use the correct hair nets to avoid any entanglement with the mill spindle or moving parts.
5. **Chuck key safety.** Always remove your chuck key, draw bar wrench, and any service tools immediately after use. Chuck keys left in the chuck can cause serious injury.
6. **Understand the machines controls.** Make sure you understand the use and operation of all controls.
7. **Tooling selection & holding.** Always use the correct cutting tool for the job you are milling. Make sure it is sharp and held firmly in place.
8. **Cutting Tool inspection.** Inspect Drill and end mills for sharpness, chips, or cracks before use. Replace any cutting tools immediately if dull, chipped or cracked. Handle new cutting tools with care. Cutting edges are very sharp and can cause lacerations.
9. **Reversing the spindle.** Make sure the spindle has come to a complete stop before changing the direction of the spindle. Do not slow or stop the spindle by using you hand.
10. **Stopping the spindle.** Do not slow or stop the spindle by using you hand.
11. **Speed selection.** Select the appropriate speed for the type of work, material, and tool bit. Allow the mill to reach full speed before beginning a cut.
12. **Clearing chips.** Always use a brush to clear chips. Never clear chips when the mill is running.
13. **Power outage.** In the event of a power failure during use of the mill, turn off all switches to avoid possible sudden start up once power is restored.
14. **Clean work area.** Keep the area around the mill clean from oil, tools and chips.
15. **Tilting head.** Use an assistant to help support the head correctly. Make sure bolts that secure the head for tilting are not loosened to much as head can slip and cause serious injury. Please refer to Mill head Tilting Instructions for correct procedure.
16. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

⚠WARNING

General Machinery Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

1. **Read the entire Manual before starting machinery.** Machinery may cause serious injury if not correctly used.
2. **Always use correct hearing protection when operating machinery.** Machinery noise may cause permanent hearing damage.
3. **Machinery must never be used when tired, or under the influence of drugs or alcohol.** When running machinery you must be alert at all times.
4. **Wear correct Clothing.** At all times remove all loose clothing, necklaces, rings, jewelry, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.
5. **Always wear correct respirators around fumes or dust when operating machinery.** Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.
6. **Always wear correct safety glasses.** When machining you must use the correct eye protection to prevent injuring your eyes.
7. **Keep work clean and make sure you have good lighting.** Cluttered and dark shadows may cause accidents.
8. **Personnel must be properly trained or well supervised when operating machinery.** Make sure you have clear and safe understanding of the machine you are operating.
9. **Keep children and visitors away.** Make sure children and visitors are at a safe distance for you work area.
10. **Keep your workshop childproof.** Use padlocks, Turn off master power switches and remove start switch keys.
11. **Never leave machine unattended.** Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.
12. **Make a safe working environment.** Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.
13. **Disconnect main power before service machine.** Make sure power switch is in the off position before re-connecting.
14. **Use correct amperage extension cords.** Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
15. **Keep machine well maintained.** Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
16. **Keep machine well guarded.** Make sure guards on machine are in place and are all working correctly.
17. **Do not overreach.** Keep proper footing and balance at all times.
18. **Secure workpiece.** Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
19. **Check machine over before operating.** Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may effect the machines operation. Repair and replace damaged parts.
20. **Use recommended accessories.** Refer to instruction manual or ask correct service officer when using accessories. The use of improper accessories may cause the risk of injury.
21. **Do not force machinery.** Work at the speed and capacity at which the machine or accessory was designed.
22. **Use correct lifting practice.** Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
23. **Lock mobile bases.** Make sure any mobile bases are locked before using machine.
24. **Allergic reactions.** Certain metal shavings and cutting fluids may cause an ellergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
25. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

PLANT SAFETY PROGRAM

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Milling Machine

Developed in Co-operation Between A.W.I.S.A and Australia Chamber of Manufactures
This program is based upon the Australian Worksafe Standard for Plant(NOHSC:1010-1994)

Item No.	Hazard Identification	Hazard Assessment	Risk Control Strategies (Recommended for Purchase / Buyer / User)
A	ENTANGLEMENT	HIGH	Eliminate, avoid loose clothing / Long hair etc.
B	CRUSHING	LOW	Secure & support workpiece on mill table.
B	CRUSHING	HIGH	Mill head tilting adjustment - please refer to mill head tilting instruction sheet for correct procedure. Incorrect adjustment may result in the head becoming detatched and a crushing hazard
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Isolate power to machine prior to any checks or maintenance being carried out. Do not adjust or clean machine until the machine has fully stopped.
D	SHEARING	MEDIUM	Make sure all guards are secured shut when machine is on. Isolate power to machine prior to any checks or maintenance.
F	STRIKING	MEDIUM	Ensure tooling is secure in chuck. Wear safety glasses. Stand clear of moving parts on machine. Remove all loose objects around moving parts. Ensure correct spindle direction when milling.
H	ELECTRICAL	MEDIUM	All electrical enclosures should only be opened with a tool that is not to be kept with the machine. Machine should be installed & checked by a Licensed Electrician.
M	HIGH TEMPERATURE	LOW	Wear appropriate protective clothing to prevent hot swarf.
O	OTHER HAZARDS, NOISE.	LOW	Wear hearing protection as required.
Plant Safety Program to be read in conjunction with manufactures instructions			

HARE&FORBES MACHINERYHOUSE

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Authorised and signed by:
Safety officer: .....
Manager: .....

Revised Date: Aug-08