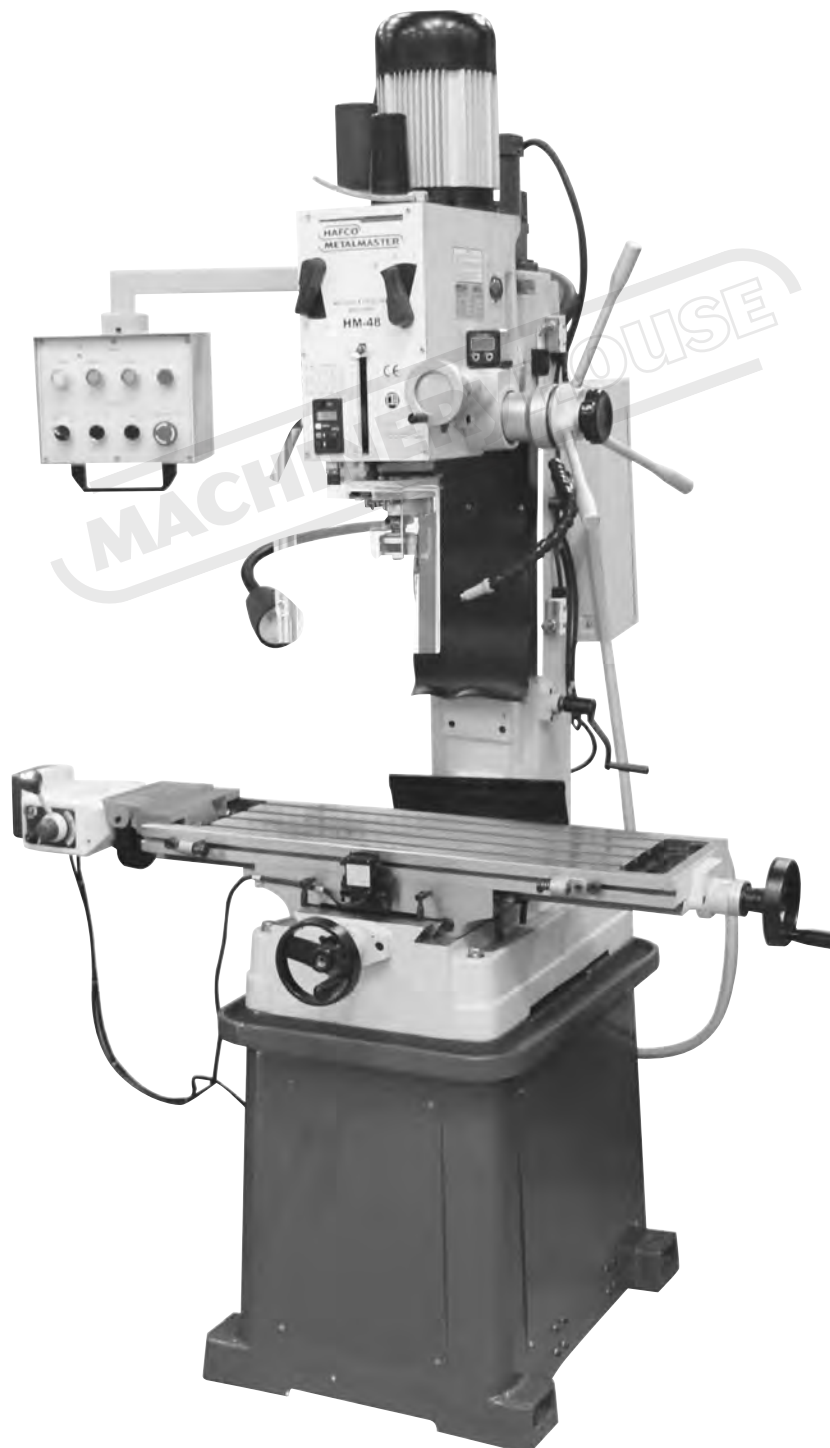


INSTRUCTION MANUAL

HM-48

Mill Drill - Geared & Tilting Head (240V)
(X) 540mm (Y) 185mm (Z) 410mm



M126

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

As with all machine 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 have had detail instruction from dealer.

SAFETY RULES FOR ALL TOOLS

1. **For your own safety, read instruction manual before operating the tool.** Learn the tool's application and limitations as well as the specific hazards peculiar to it.
2. **Keep guards in place** and in working order.
3. **Ground all tools.** If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter lug must be attached to a known ground. Never remove the third prong.
4. **Remove adjusting keys and wrenches.** From habit of checking to see that keys and adjusting wrenches are removed from tool before turning it "on".
5. **Keep work area clean.** cluttered areas and benches invite accidents.
6. **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.
7. **keep children and visitors away.** All children and visitors should be kept a safe distance from work area.
8. **Make workshop childproof** with padlocks, master switches, or by removing starter keys.
9. **Don't force tool.** It will do the job better and be safer at the rate for which it was designed.
10. **Use right tool.** Don't force tool or attachment to do a job for which it was designed.
11. **Wear proper apparel.** No loose clothing, gloves, neckties, rings, bracelets, or other jewelry to get caught in moving [parts. Nonslip foot wear is recommended. Wear protective hair covering to contain long hair.
12. **Always wear eye protection.** Refer to standard for appropriate recommendations. Also use face if dust mask of cutting operation is dusty.
13. **Secure work.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.

14. **Don't overreach.** Keep proper footing and balance at all times.
15. **Maintain tools in top condition.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
16. **Disconnect tools** before servicing and when changing accessories such as blades, bits, cutters, etc.
17. **Use recommended accessories.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause hazards.
18. **Avoid accidental starting.** Make sure switch is in "OFF" position before plugging in power cord.
19. **Never stand on tool.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.
20. **Check damaged parts.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function check for alignment of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
21. **Direction of feed.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
22. **Never leave tool running unattended. Turn power off.** Don't leave tool until it comes to a complete stop.
23. **Drugs, alcohol, medication.** Do not operate tool while under the influence of drug, alcohol or any medication.
24. **Make sure tool is disconnected from power supply** while motor is being mounted, connected or reconnected.

ADDITIONAL SAFETY RULES FOR MILL/DRILL

1. **Be sure** drill bit or cutting tool is securely locked in the chuck.
2. **Be sure** chuck key is removed from the chuck before turning on power.
3. **Adjust** the table or depth stop to avoid drilling into the table.
4. **Shut off** the power, remove the drill bit or cutting tool, and clean the table before leaving the machine.
5. **Caution.** When practical, use clamps or a vise to secure workpiece to keep the workpiece from rotating with the drill bit or cutting tool.
6. **Warning:** For you own safety, Don't wear gloves when operating a mill/drill.

Thank you for purchasing our **GEARED HEAD DRILLING AND MILLING MACHINE** If you hope to keep machine in good condition or best performance over a long period of time, you should operate and maintain accurately, acquaint yourself with the construction of machine, the functions of all operating controls, the driving and the lubricating system.

SPECIFICATION

MODEL	ZX7040	ZX7040A	HM-48
Max. drilling capacity	31.5		45mm
Max. tapping capacity	12mm		
Max. face milling capacity	80mm		
Max. end milling capacity	28mm		
Distance spindle axis to column surface	272.5mm	261mm	
Max. distance spindle nose to table	450mm		475mm
Spindle taper	MT.3 or R8		MT.3
Max. spindle stroke	120mm		
Spindle speeds range (motor 1400r/min)	95 170 280 540 960 1600		
Working area of table (L×W) mm	730×210		820×240
Travel of table (L×C) mm	500×175		550×200
Motor	1500w, 1400r/min		
Overall dimension(L×W×H) cm	80×105×110	80×114×104	
Net weight	255kg	267kg	278kg

ACCESSORIES:

Tapered bar	MT.3-B18/R8-JT3	1
Drill chuck	16mm	1
Face milling cutter	80mm	1
Handle of spindle head	24mm	1
Lock wrench		1
Inner hex wrench	4, 5, 6mm	each 1
Arbor bolt		1(in the table)
Tapered sleeve*	MT.3-MT.2 MT.4-MT.3	1 (MT.4-MT.3only for MT.4spindle)
Slotted tapered sleeve		Only for MT.4 spindle
Wedge*		1

Note: When R8is selected, there is no tapered sleeve and no wedge.

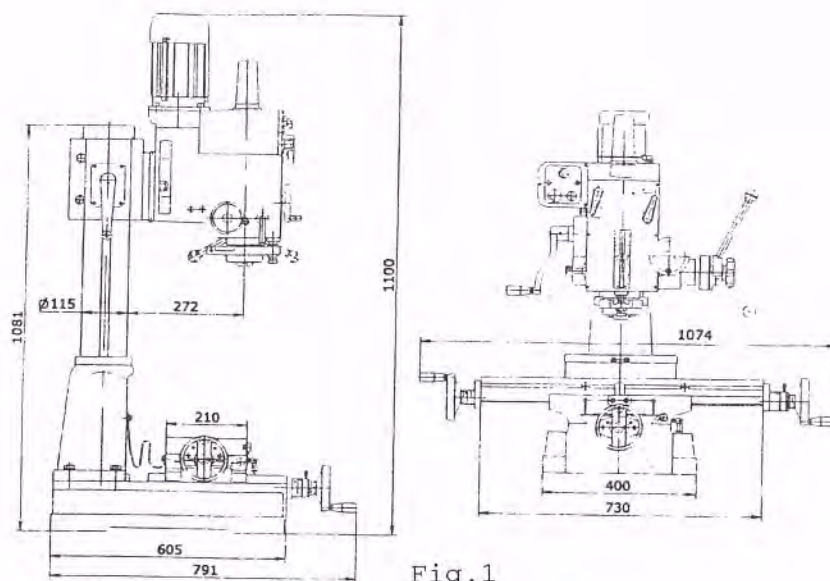


Fig.1

ZX7040

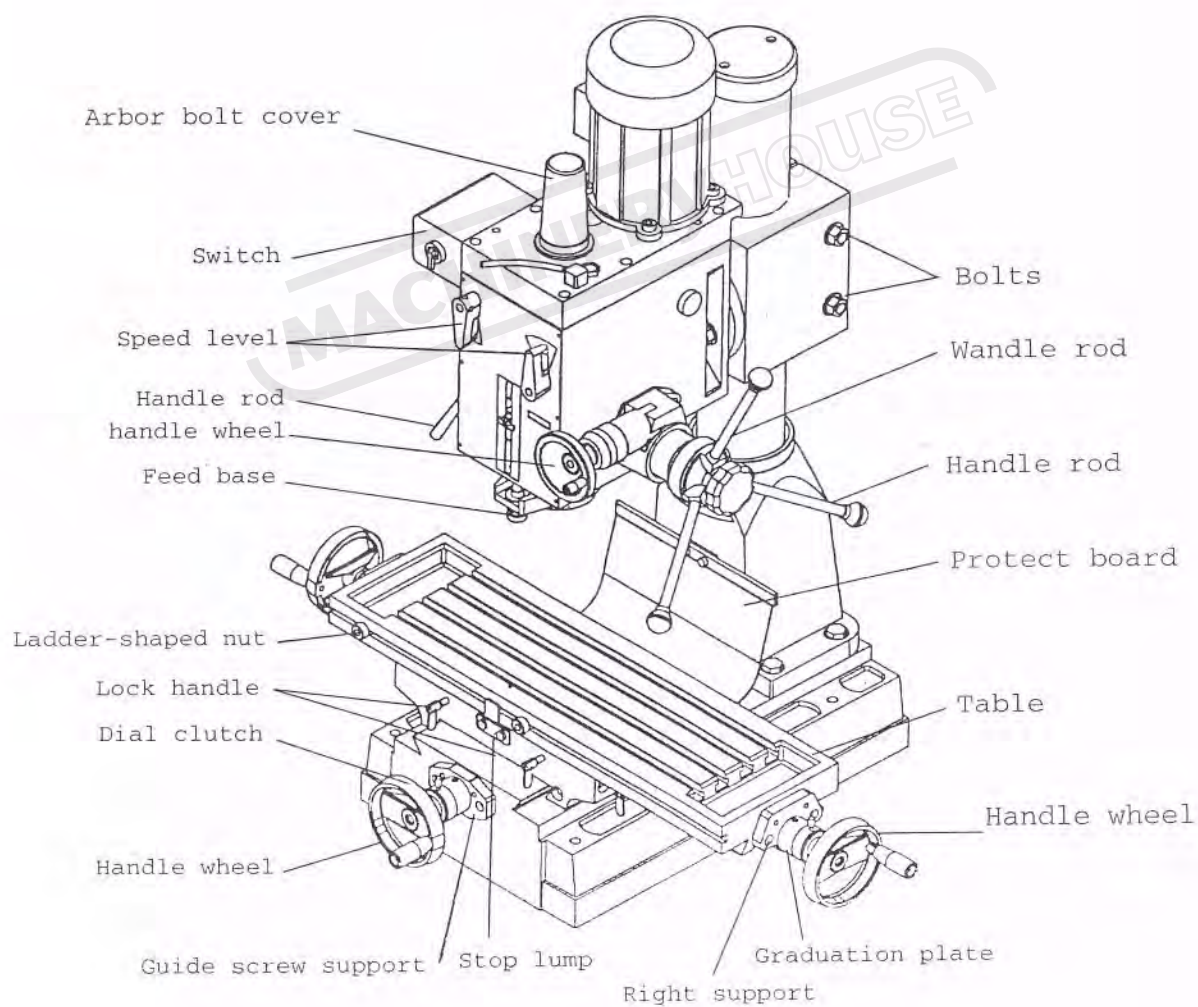


Fig.2

ZX7040A 、 HM-48

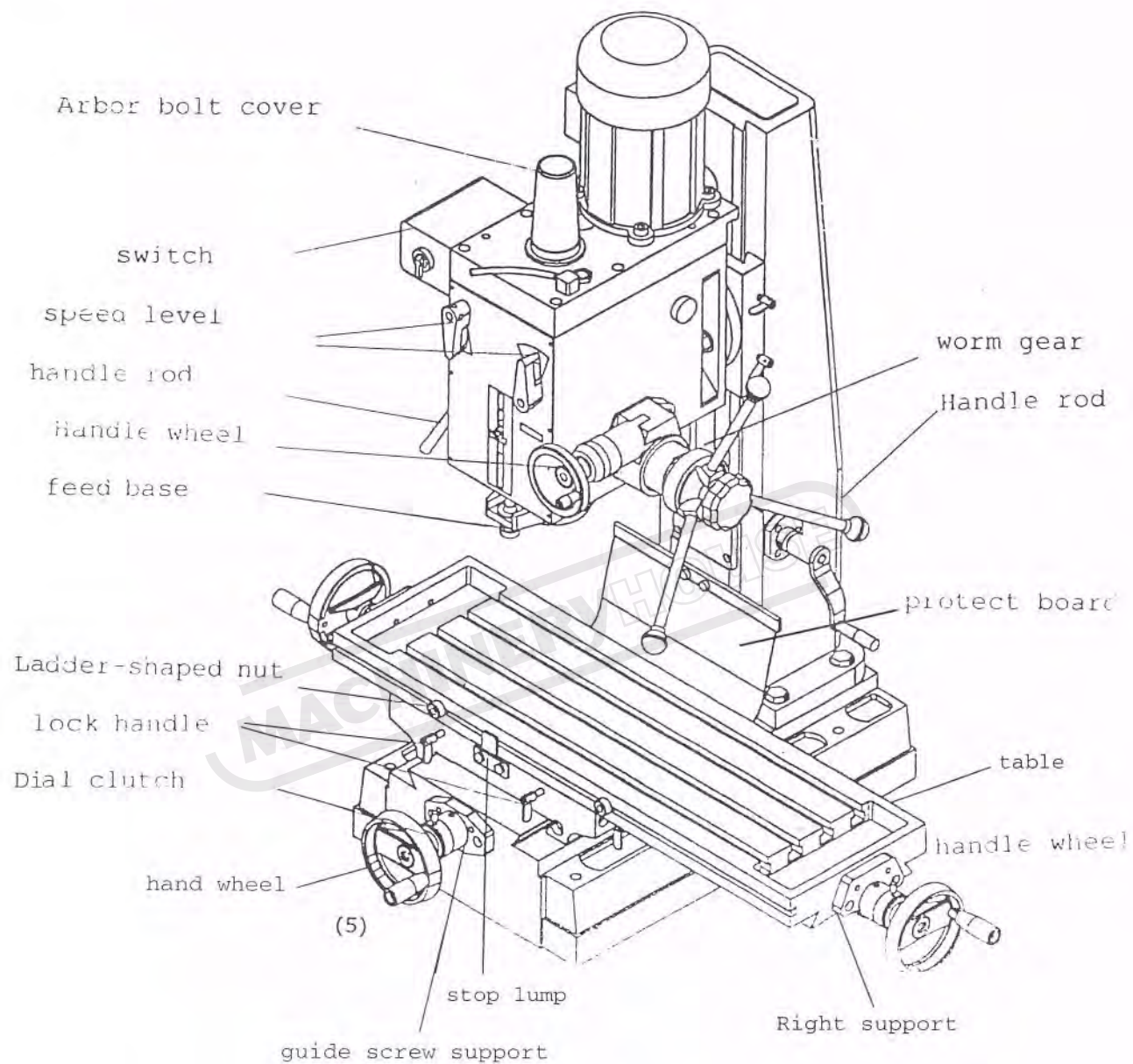


Fig.3

Speed changing

The main driving route of the machine is as follows: motor ---three groups of gears----splined sleeve ---spindle , when using a motor with a 1400r/min as power, 6 spindle speeds from 95 r/min to 1600 r/min can be obtained by shifting the position of sliding gears. If it is needed to change the spindle speed. **Please turn off the power at first**, then turn the changing -speed handle to the required position.

Note: Before changing the speed, the power must be turned off at first.

r/min	L1	L2	L3	H1	H2	H3
50Hz	95	170	280	540	960	1600
60Hz	120	210	345	670	1180	1970

There are two forms of the spindle feeding mechanism. One is the direct feeding form: The spindle feeding is performed by the drilling handle on the gear shaft directly. Under this condition, the spindle feeds 88mm as the gear shaft turns one time. The other form is micro-feeding form: when the hand feeding wheel drives the worm gear through the cone clutch driving the gear shaft to feed the spindle. The spindle feed 2.5mm as the hand feeding wheel turns one time

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 bright work with a light lubrication. 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. 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.

CHANGE THE GEAR BOX OIL: Tilt the head stock over as shown in Fig 2. 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.

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

PRECAUTION FOR OPERATION

Check all parts for proper condition before operation; if normal safety precautions are noticed carefully, this machine can provide you with standing 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 workpiece 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) To raise and lower the head, loosen the two heavy duty head lock nuts shown in Fig.4. 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 360° by loosening the same bolts mentioned above. Adjust the head to the desired angle, then fix the heavy duty head locknuts. It is tighten 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 you wish on the scale, then screw the 3.

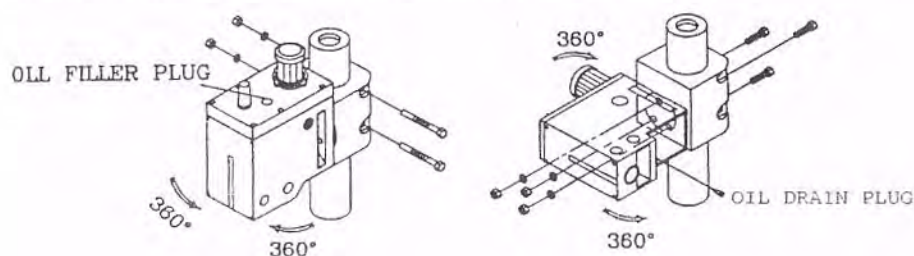


Fig.4

4) Preparing for drilling (see Fig.5).

Turn off 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.5).

- 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 workpiece machining height.
- c) Lock the rack sleeve at the desired height with fixed bolt.

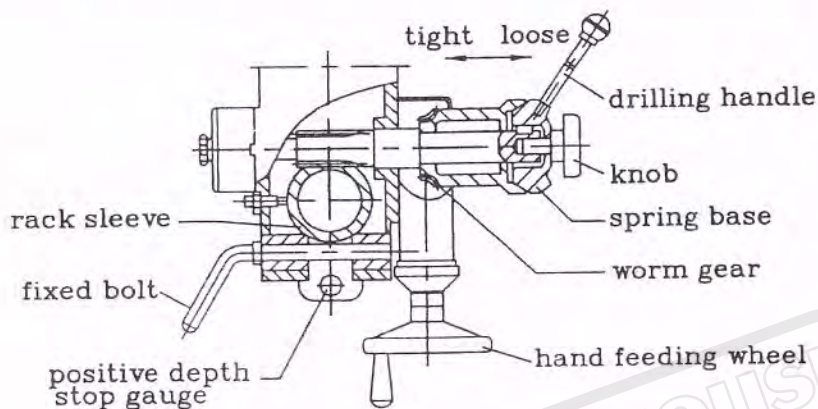


Fig.5

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 spindle drilling or tapping head is used. If adjustment is necessary, loosen lock screw while holding quill spring housing. 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 lockscrew make sure point of screw mates to flat on the housing journal.

Adjusting table slack and compensate for wear (see Fig.6)

- 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.

Clamping, table base, and machine base (see Fig.6)

- 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 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.

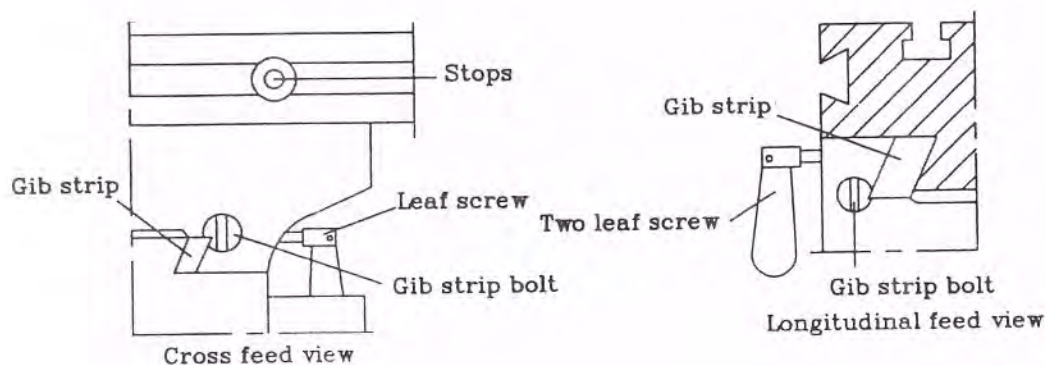
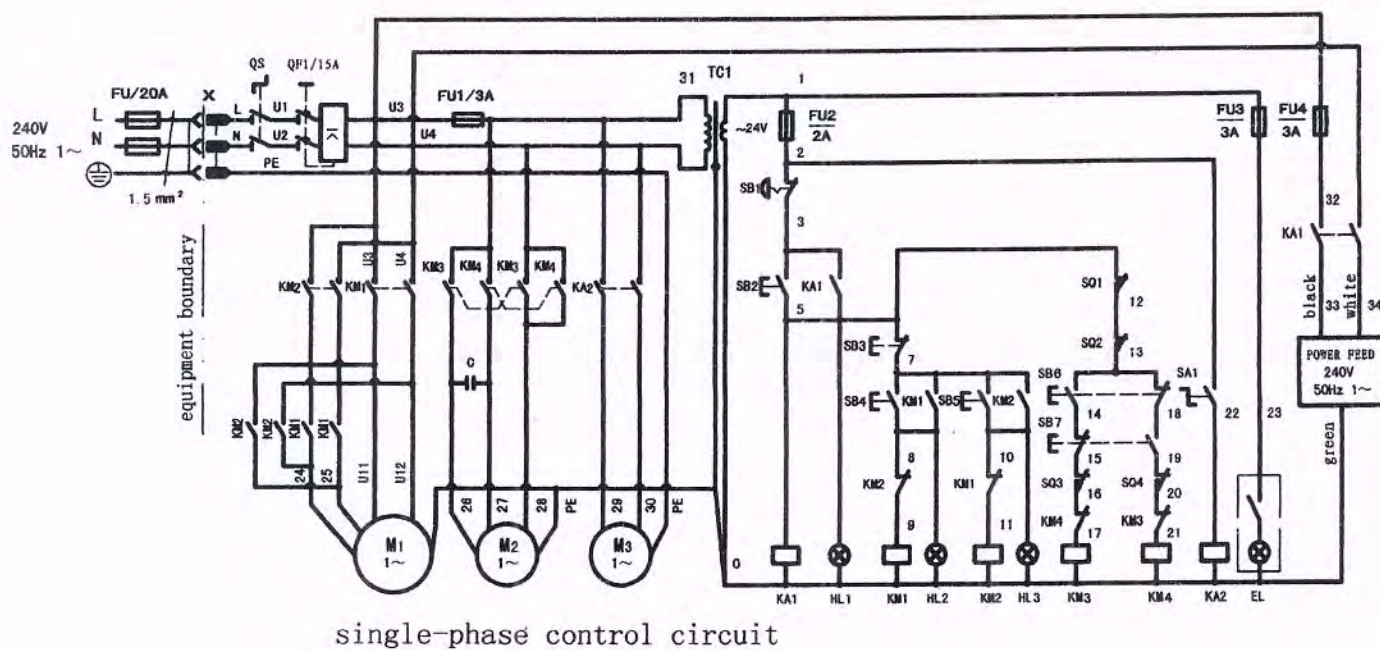


Fig.6

To change tool

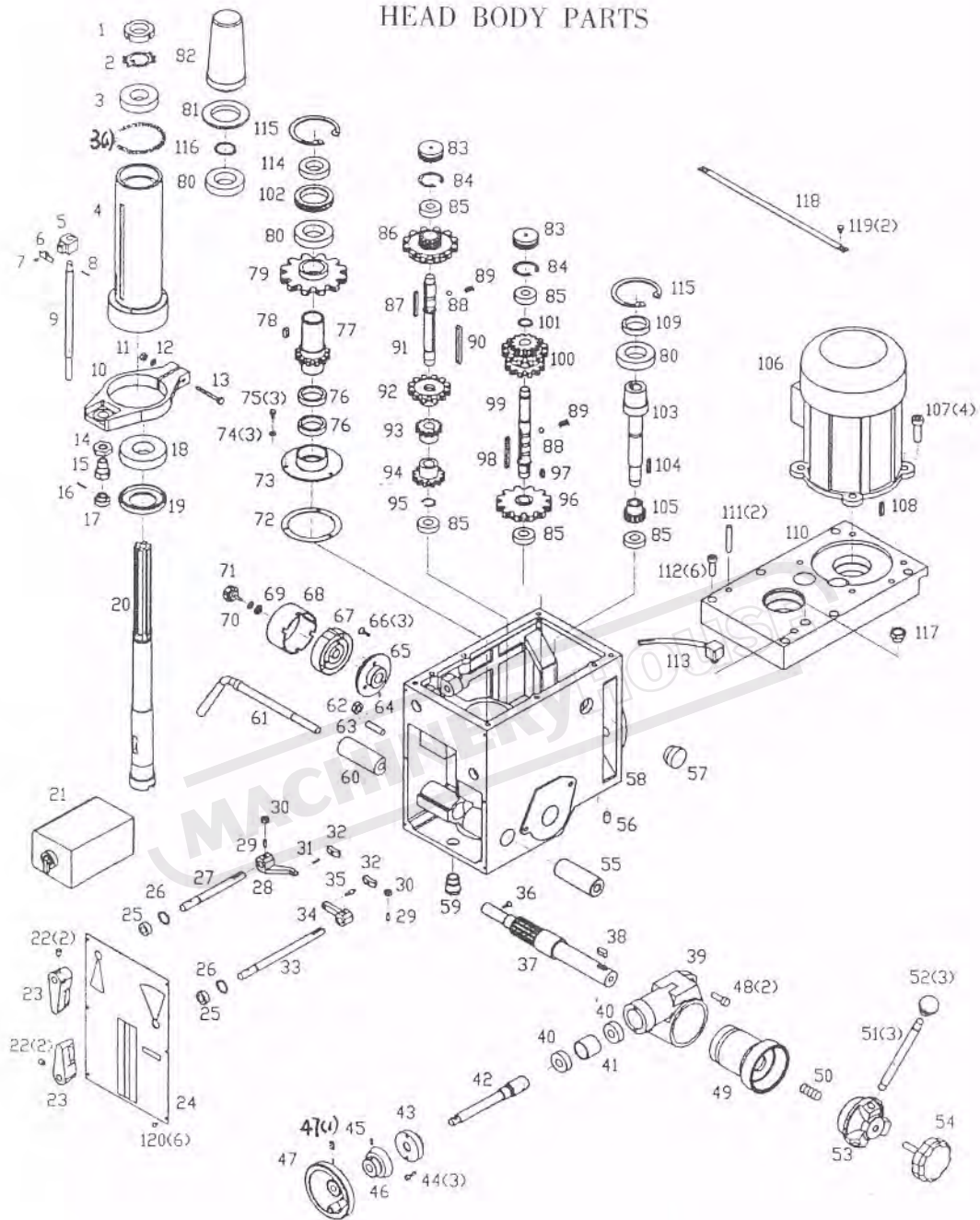
- 1) Removing face mill or drill chuck arbor.
Loosen the arbor bolt at the top of the spindle shaft approximately 2 turns with a wrench. Rap the top of the arbor bolt with a mallet.
After taper has been broken loose, holding chuck arbor on hand and turn detach the arbor bolt with the other hand.
- 2) 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.
- 3) Removing taper drills.
 - a) Turn down the arbor bolt 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.

Electric system

TROUBLE SHOOTING HINTS

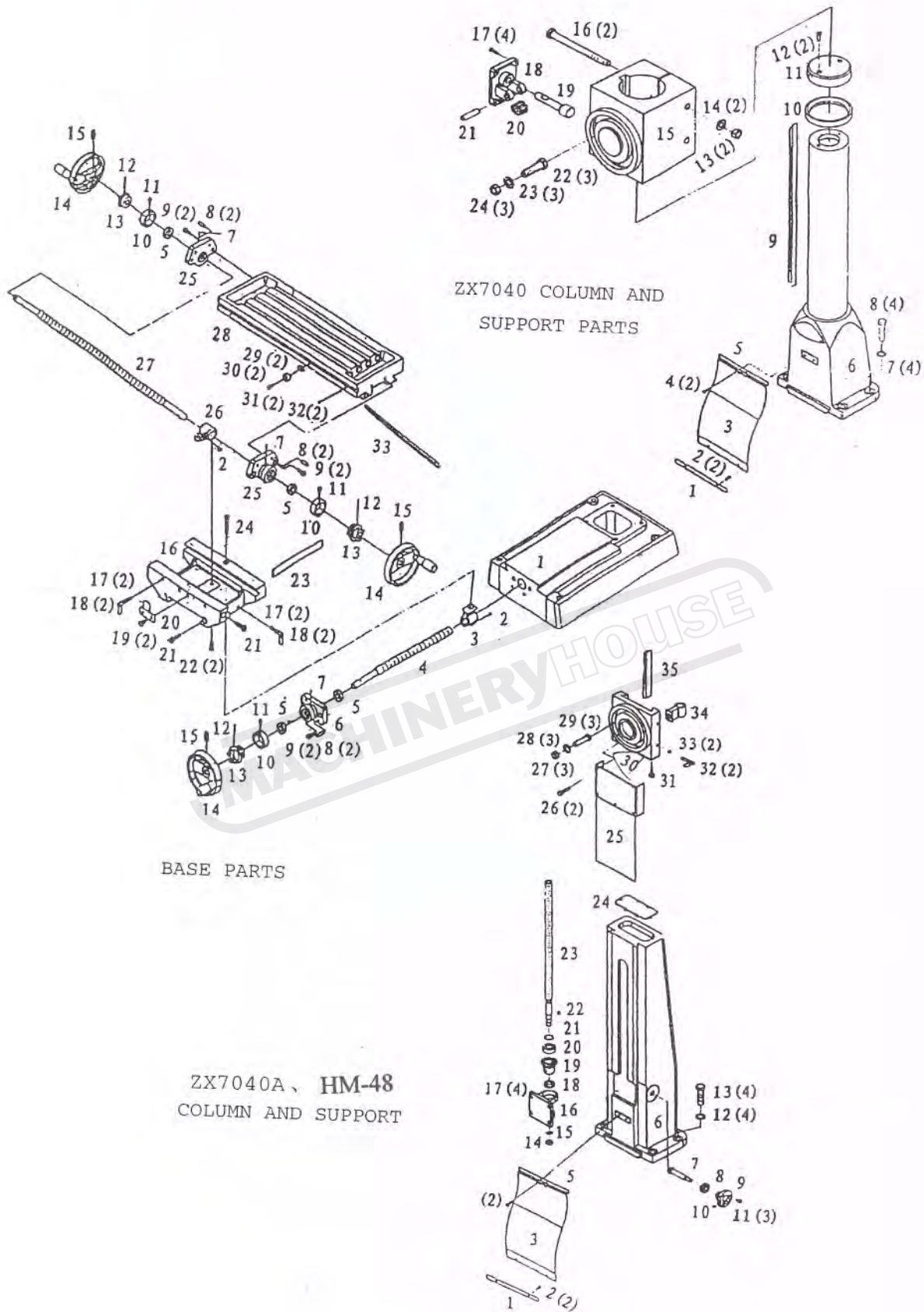
TROUBLE	PROBABLE CAUSE	REMEDY
Excessive vibration	1 Motor out-of-balance 2 Bad motor	1 Balance or replace problem motor 2 Replace motor
Motor stalls	1 Over feeding 2 Dull drill 3 Motor not building up to running speed 4 Bad motor	1 Reduce feed rate 2 Sharpen drill and keep sharp 3 Replace or repair motor. Check fuses in all three legs on three phase motors and replace if necessary 4 Replace motor
Noisy operation	1 Excessive vibration 2 Improper quill adjustment 3 Noisy spline 4 Noisy motor	1 Check remedy under excessive vibration 2 Adjust quill 3 Lubricate spline 4 Check motor bearings or for loose motor fan
Drill or tool heats up or burns work	1 Excessive speed 2 Chips not clearing 3 Dull tool 4 Feed rotate too slow 5 Rotation of drill incorrect 6 Failure to use cutting oil or coolant (on steel)	1 Reduce speed 2 Use pecking operation to clear chips 3 Sharpen tool or replace 4 Increase feed enough to clear chips 5 Reverse motor rotation 6 Use cutting oil or coolant on steel
Drill leads off	1 No drill spot 2 Cutting lips on drill off center 3 Quill loose in head 4 Bearing play	1 Center punch or center drill workpiece 2 Re grind drill 3 Tighten quill 4 Check bearing s and reseal or replace if necessary
Excessive drill runout or wobble	1 Bent drill 2 Bearing play 3 Drill not seated properly in chucks	1 Replace drill .do not attempt to straighten 2 Replace or reseal bearings 3 Loosen, reseal and tighten chuck
Work or fixture comes loose or spins	Failure to clamp workpiece or work holding device to table	Clamp workpiece or work holding device to table surface

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	oil 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



BASE PARTS

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

ZX7040 COLUMN AND SUPPORT PARTS

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

ZX7040A HM-48 COLUMN AND SUPPORT PARTS

1 protect board slice	13 bolt	24 column nut
2 bolt	14 round nut	25 antidust plate
3 protect board	15 tab washer for round nut	26 screw
4 bolt		27 nut
5 protect board fixed	16 head raise bracket	28 washer
6 column	17 screw	29 bolt
7 gear shaft	18 ball bearing	30 toruise and lower
8 ball bearing	19 gear	31 screw
9 head raise bracket	20 ball bearing	32 lock handle
10 oil cup	21 retainer ring	33 steel ball
11 screw	22 key	34 column nut
12 washer	23 guide screw	35 gib 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 be 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 your hand.
- 10. Stopping the spindle.** Do not slow or stop the spindle by using your 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 your 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 allergic 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.
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Incorrect adjustment may result in the head becoming detached and a crushing hazard 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.
M	HIGH TEMPERATURE	LOW	Machine should be installed & checked by a Licensed Electrician.
O	OTHER HAZARDS, NOISE.	LOW	Wear appropriate protective clothing to prevent hot swarf. Wear hearing protection as required.

Plant Safety Program to be read in conjunction with manufactures instructions



www.machineryhouse.com.au



www.machineryhouse.co.nz

Authorised and signed by:

Safety officer:

Manager:

[Signature]

Revised Date: Aug-08