

INSTRUCTION MANUAL

MC-370F Soco Cold Saw, Includes Stand (415V) 110 x 110mm



S840

Model : MC-370F Trouble Shooting Guide

Problems	Sources	Solutions
1. Machine will not start	a. Main power cable is not connected to the power source. b. Feed lever switch is broken, or the control wire is disconnected. c. The transformer is shorted and broken. d. The Phase Converter is broken (if using Phase Converter).	a. Check power supply. b. Use multi meter to test the feed lever switch and the control wire. c. Use multi meter to test the transformer. If the output value is incorrect, the transformer is broken. Replace it when needed. d. Use multi meter to test the Phase Converter. Replace the Phase Converter when needed.
2. Motor will not start	a. One or more of the 3 phases of the main power is not connected. b. The Select Switch is shorted and broken. c. The Solenoid Switch is not well connected. (One or more of the connecting wires is not connected). d. The motor is shorted or broken.	a. Use multi meter to test if all of the 3 phases are connected. b. The Select Switch controls the high or low speed. If one of the speeds is not working, the select switch is broken. To test, connect power supply directly to the motor to see if the select Switch is broken. Replace when needed. c. Use multi meter to test the Solenoid Switch. If one or more of the connecting wires is not connected, replace the Solenoid Switch. d. Use multi meter to test the 3 phases of the main power. If all 3 phases are normal, the motor may be broken. Replace it when needed.
3. Coolant Pump not working	a. Inadequate coolant. b. The Coolant Pipe Check Valve is clogged. c. The Coolant Nozzle is clogged. d. Coolant pump is reversed or burned.	a. Refill coolant (up to 8/10 of the tank). b. Clean Coolant Pipe Check Valve, or replace it. c. Clean Coolant Nozzle or replace it. d. If the coolant pump is reversed, switch any 2 of the 3 phases. Replace the coolant pump if it is burned.
4. Clamping Vise cannot be moved	a. The rail shaft is rusted. b. Accumulated metal fragments around the screw shaft or the nuts. c. The holes on the Clamping Vise	a. Take off the rail shaft and clean up the rust. b. Take off the screw shaft and the nuts on the shaft. Clean up the metal fragments on these parts. c. Test by moving the whole Clamping Vise Set.

	are worn out, or the rail shaft is worn out.	If it is loose (the set is worn out), replace it with a new set.
5. Broken or Chipped Blade	a. Incorrect selection of the blade (incorrect number of teeth). b. The work piece is loose, and the locking nut in front of the handle is loose. c. The vise is worn out and loose. d. The gear inside of the machine head is worn out. As a result, the blade is loose (if moved by hand, the blade rotates too much). e. The blade is installed facing the wrong direction (The sharpened end of the teeth must face the same direction toward which the blade rotates). f. The blade is loose.	a. The selection of the blade and the number of teeth on the blade depend on the material of the work piece. Please consult our service centers for the correct selection of the blade. b. Make sure the work piece is properly secured, and the locking nut in front of the handle is properly placed and tightened. c. Replace the vise. d. Replace the gear. Please contact our service centers for replacement. e. When installing the blade, make sure the sharpened end of its teeth faces the correct direction. Please follow the arrow instruction. f. Make sure the blade is properly secured.
6. Inaccurate Cutting Angle	a. The blade vibrates too much. b. If the blade is too thin, it may not cut in the correct angle. c. The Clamping Vise Set is worn out and shakes. d. The handle on the rotary support is loose. e. The screws used to secure the vise body are loose.	a. Can be identified by looking at the blade or testing with measuring equipment. b. Replace with thicker blade. c. Replace the Clamping Vise Set. d. Push the handle to the right and tighten it. e. Readjust and tighten and screws on the vise body.

CONTENTS

1. SAFETY PRECAUTION-----	3
2. SPECIFICATION AND OUTLINE DRAWING-----	4
2.1 Technical Data	
2.2 Cutting Capacity	
2.3 Accessory	
2.4 Outline Description	
3. INSTRUCTION OF INSTALLATION-----	8
3.1 Unpacking and Inspection	
3.2 Lifting, Moving and Anchoring	
3.3 Connecting Electric Power	
3.4 Filling coolant	
3.5 Procedure to install the stopper	
4. FUNCTION OF CONTROL DEVICES-----	10
5. INSTRUCTION OF OPERATION-----	11
5.1 Preparation for Operation	
5.1.1 Adjustment of Clamping Vise	
5.1.2 Installation of Saw Blade	
5.1.3 Adjustment of Saw Blade Low Stop Position	
5.1.4 Adjustment of Saw Blade Rotating Speed	
5.1.5 Adjustment of Miter Cutting	
5.2 Steps of Operation	
5.3 Daily Inspection and Maintenance	
6. ELECTRICAL SYSTEM DIAGRAM-----	13
7. PARTS DRAWING AND LIST-----	14

1. SAFETY PRECAUTION

- (1) Operator of the machine shall read the operation instruction carefully and understand the safety requirement and the function of all parts of machine thoroughly.
- (2) Only the authorized and dedicated operators are allowed to operate the machine.
- (3) The machine is designed and manufactured to meet the applicable safety regulation of your country. Please do not remove or modify any safety device or parts, such as safety cover and guard of saw blade, emergency stop button, etc.
- (4) Assure the correct electric power, such as capacity of voltage, amperage and protection, is connected to the machine before operation.
- (5) Please wear a pair of goggles when operating the machine.
- (6) Please push the emergency stop button and turn off the main switch immediately when any malfunction or emergency situation should occur.
- (7) Please disconnect the electric power when install, maintain, repair or disassemble the machine.
- (8) Please pay extreme attention to adjust or exam the machine with electric power has been connected.
- (9) Please operate the machine in a bright and clean environment
- (10) Please clean and maintain the machine periodically to assure the machine running in proper condition.
- (11) Do not operate the machine excess its allowable condition.

2. SPECIFICATIONS AND OUTLINE DRAWING

2.1 Technical Data

MC-370F TECHNICAL DATA		
	A-TYPE	B-TYPE
MAIN MOTOR	3/2 HP, 2/4 POLE	2/1.4 HP, 4/8 POLE
ARBOR RPM (60 HZ)	44/22	22/11
SAW BLADE TYPE	HIGH SPEED STEEL BLADE	
SAW BLADE SIZE	OD: 300/350/370 mm	
COOLING PUMP	1/8 HP	
AIR PRESSURE	--	
WEIGHT	260 KG	

2.2 Cutting Capacity

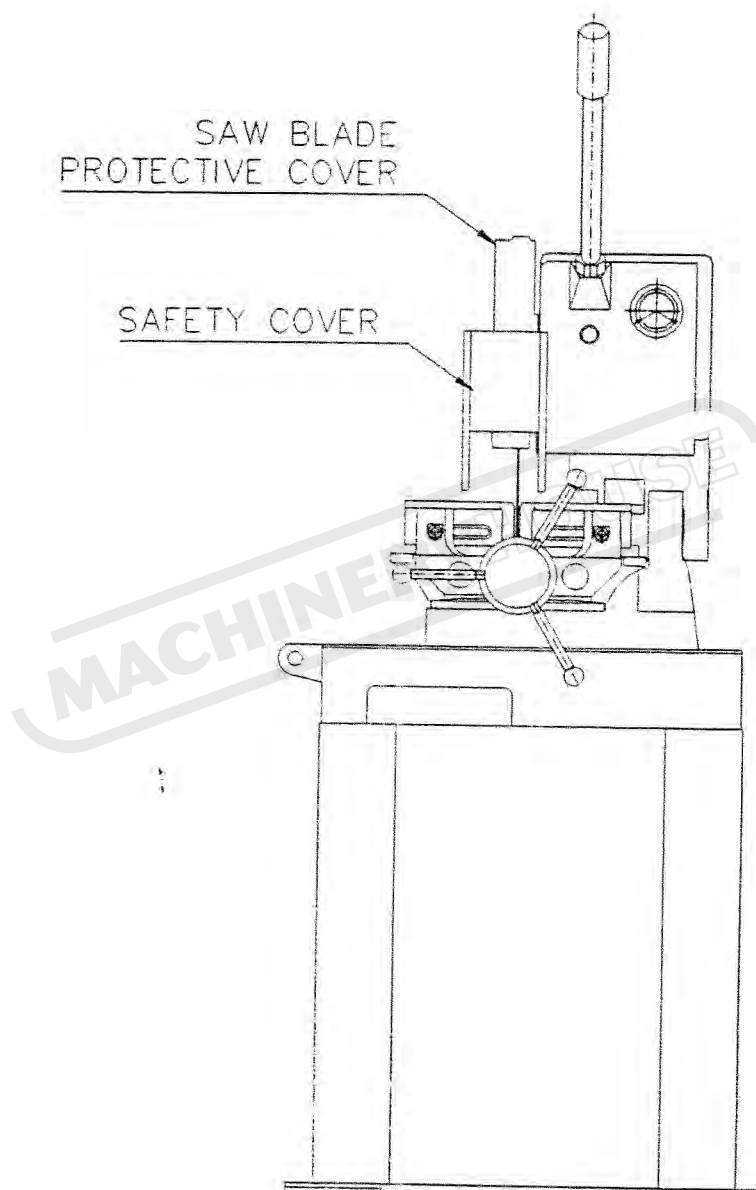
MC-370F CUTTING CAPACITY(USE $\varnothing$ 370 BLADE) mm		
FOR MILD STEEL	CUTTING ANGLE	
	90°	45°
ROUND TUBE	$\varnothing$ 115	$\varnothing$ 115
SQUARE TUBE	110×110	100×100
ANGLE	110×110	100×100
RECTANGLE	110×110	100×100
SOLID ROUND TUBE	$\varnothing$ 75	$\varnothing$ 50
SOLID SQUARE TUBE	75x75	50x50

2.3 Accessory

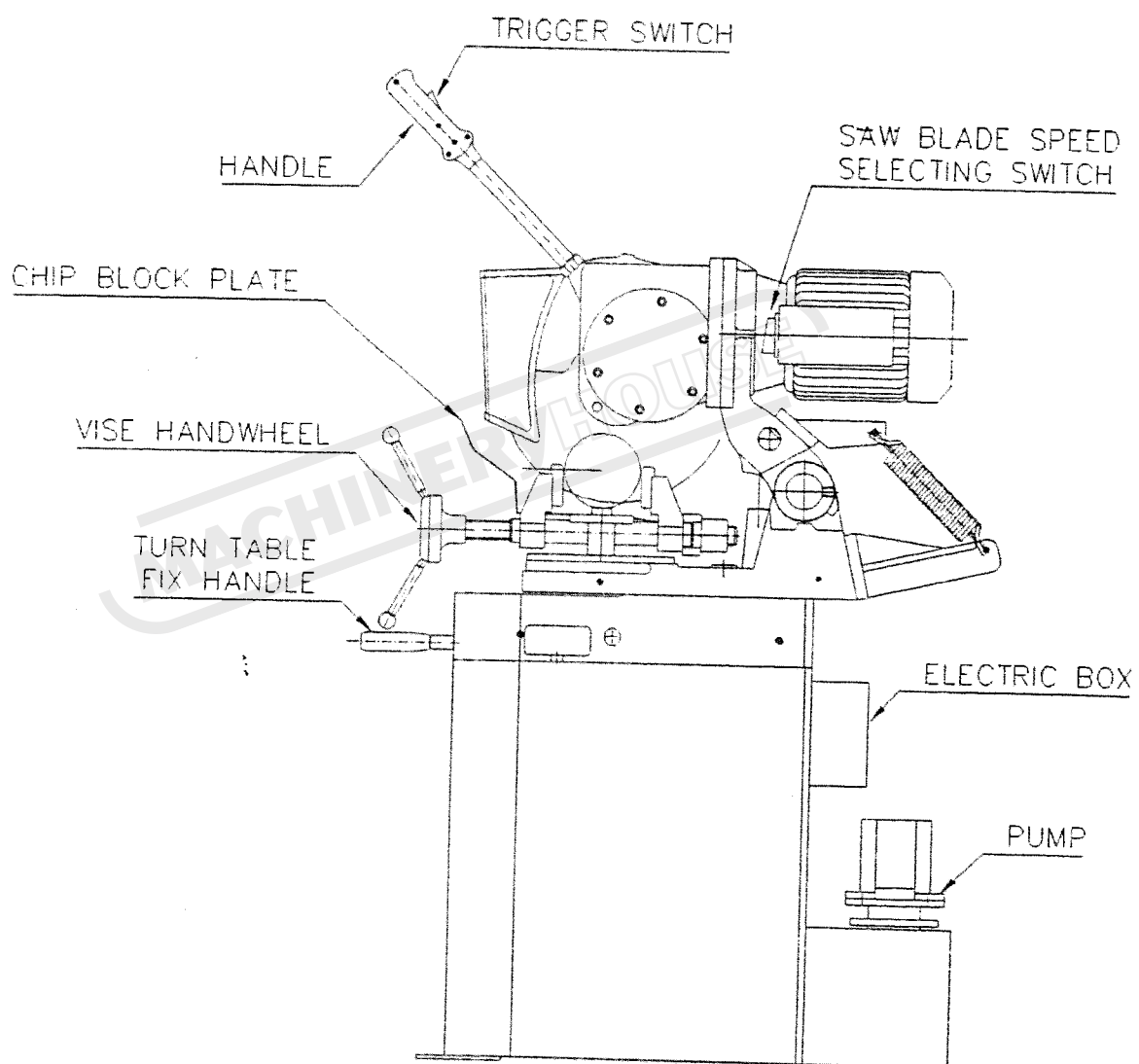
- (1) One set simple adjustable length stopper
- (2) One package of hand tool

2.4 Outline Description

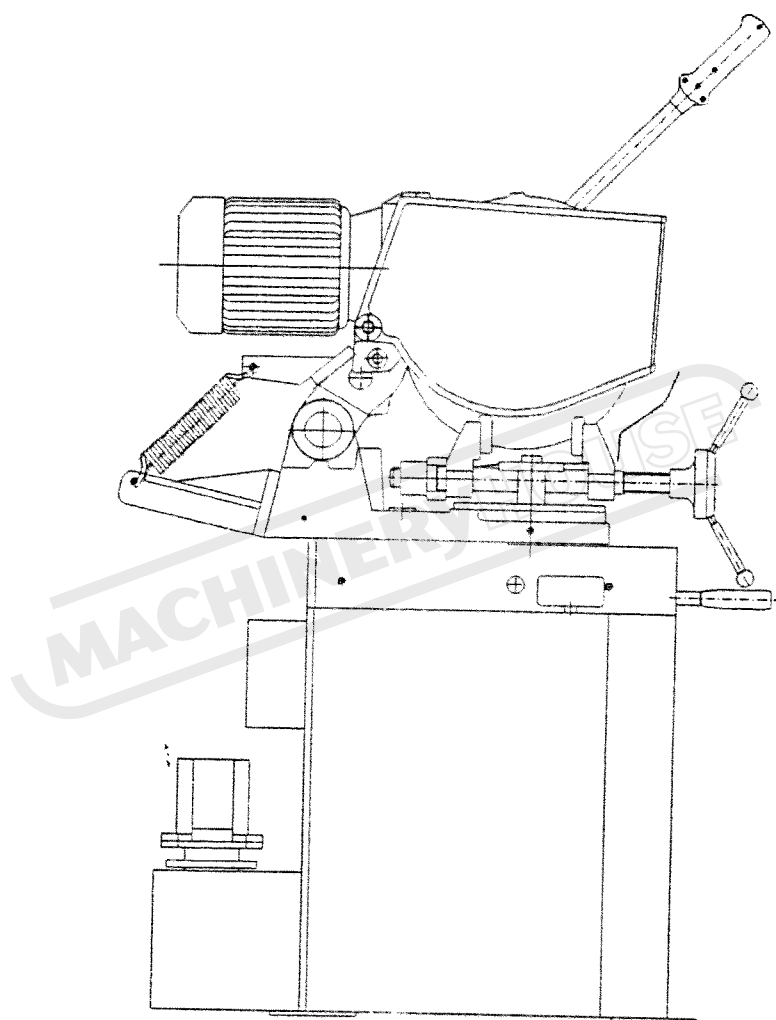
(1) Front View



FRONT VIEW

(2) Right Side View

RIGHT SIDE VIEW

(3) Left Side View

LEFT SIDE VIEW

3. INSTRUCTION OF INSTALLATION

Note: Please read the instruction carefully before installation.

If having any question please contact your dealer for prompt service.

3.1 Unpacking and Inspection

- (1) Check if there is any damage on the wooden case or the plastic bag that used to pack the machine. Should any damage be found on the machine, please claim for the damage against the delivery or insurance company.
- (2) Check the machine and accessories against the packing list. Should any shortage, please contact your dealer.

3.2 Lifting, Moving and Anchoring

- (1) Lifting eyebolts have been mounted on the machine. Please use hoist and sling devices with enough capacity to lift and move the machine.
- (2) Slots, designed at the bottom of the machine, can be used by forklift to move the machine.
- (3) Please watch over the obstacle or personnel that may be on the way of moving the machine.
- (4) Place the machine on a horizontal foundation. Use anchor bolt and nut to fix the machine on the foundation.

3.3 Connecting Electric Power

Note:

- (1) Assure the main power switch is at "OFF" position and the saw blade motor speed select switch is at "OFF" position before connecting the machine to electric power source
 - (2) Do not install saw blade on the main shaft when checking the rotational direction of the main shaft.
-
- (1) Only qualified electrician can connect electric power.
 - (2) The voltage, amperage and protection capacity of the power source shall meet the requirement of the machine.

- (3) Check the rotation of the saw blade shaft (arbor). Change over two conductors in junction box if the direction of rotation does not consist with the direction of the label on the saw blade safety cover.

3.4 Filling coolant

- (1) Pour the diluted sawing oil on the table of the machine. The solution will flow into the coolant tank.
- (2) The dilute ratio (water: oil) is 5:1 for hard or high alloy steel and 10:1 for mild steel.

3.5 Procedure to install the stopper

- (1) Mount the stopper arm at the "0" point on the stopper support beam as illustrated on following figure1.
- (2) Put the stopper support beam into the hole in the base plate.
- (3) Fix the stopper support beam when the stopper is just touching the sawblade as illustrated on following figure2.

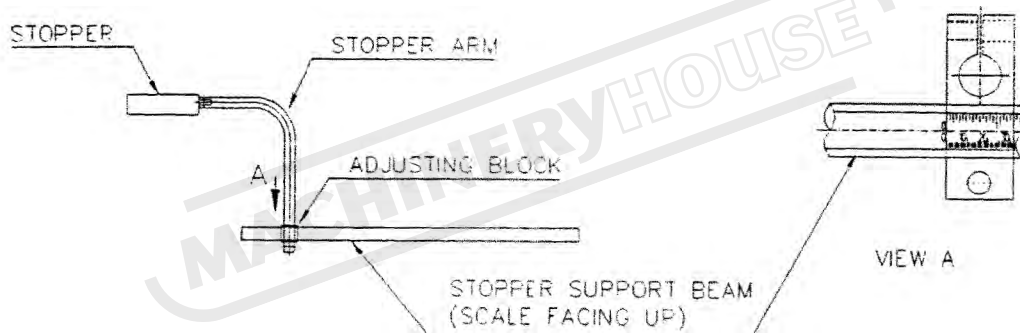


FIGURE 1

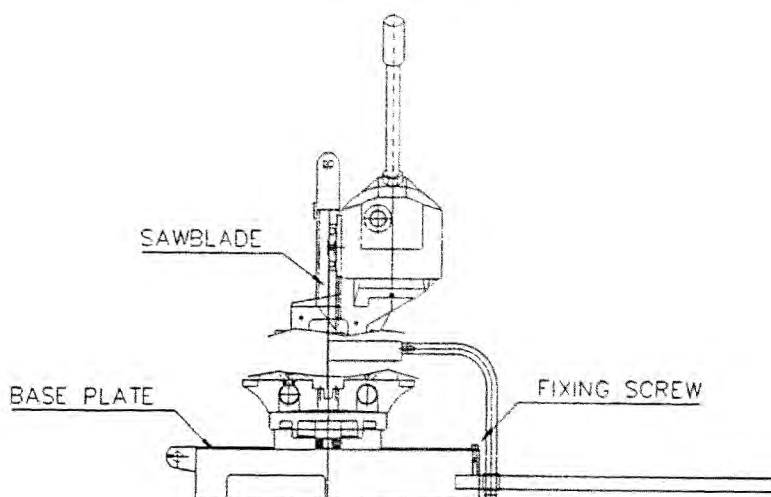


FIGURE 2

4. FUNCTION OF CONTROL DEVICES

(1) Trigger Switch

This is an "ON-OFF" two-position trigger Switch on the handle to connect or disconnect power to the machine. The main (saw blade) motor and coolant motor run when this switch is pressed. The above motor stop when this switch is released.

(2) Saw Blade Motor Speed Select Switch

This is a "LOW-OFF-HI" three-position level switch on the right side of the motor for selecting a suitable speed for saw blade to cut material.

MACHINERYHOUSE

5. INSTRUCTION OF OPERATION

5.1 Preparation for Operation

5.1.1 Adjustment of the Clamping Vise

- (1) Release the handle.
(Cutting head shall be at up position)
(Saw blade motor shall stop.)
- (2) Turn the hand wheel of clamping vise counter-clockwise to open the vise.
- (3) Put a work piece into the clamping area of vises.
- (4) Turn the hand wheel of clamping vise clockwise to close the vise and fasten work piece.
- (5) Turn the hand wheel of clamping vise 1/2 (half) turn counter-clockwise. This is the ready position.

5.1.2 Installation of the Saw Blade

- (1) Release the handle.
- (2) Turn off the saw blade motor speed select switch.
- (3) Open saw blade safety cover.
- (4) Remove the clamping flange from the saw arbor.
- (5) Clean the clamping surfaces of flange and arbor free from any dirt or chips.
- (6) Clean the clamping area of the saw blade.
- (7) Mount saw blade on the arbor. Align the pinholes of saw blade and arbor. Put the clamping flange on the saw blade, and tighten the center bolt.
Note: The rotation of saw blade shall be **counter-clockwise** while looking at the mounting surface. There is a directional mark labeled on the protection cover.
- (8) When lock the center bolt, **keep the front part of saw blade downward** to eliminate the gap between pin and pinhole.
- (9) Close the saw blade safety cover.

Note: The following Charts of " Number of Saw Blade Tooth Selection " are for reference.

Number of Saw Blade Tooth (T) for Mild Steel Solid Bar Cutting					
Wall Thickness of Tube (mm)	Diameter of Saw Blade (mm)				
	Φ250	Φ275	Φ300	Φ350	Remark

0.6~0.8	T=280	280	300	320	For Tube Diameter $D \geq 10$ mm
0.8~1.0	240	280	280	320	
1.0~1.2	220	240	240	280	
1.2~1.6	200	220	240	240	
1.6~2.0	180	200	220	220	
2.0~2.5	150	180	180	200	$D \geq 15$ mm
2.5~3.5	120	150	150	180	$D \geq 20$ mm
3.5~4.5	90	120	120	150	$D \geq 25$ mm
4.5~5.5	80	80	90	120	$D \geq 30$ mm
5.5~7.0	64	64	80	90	$D \geq 40$ mm

For Wall Thickness ≥ 2 mm, the Formula for Number of Tooth T is as following

$$T = 2 \times (\text{Diameter of Saw Blade} \times 3.14) \div (\text{Wall Thickness of Tube})$$

Number of Saw Blade Tooth (T) for Mild Steel Solid Bar Cutting					
Size of Bar (mm)	Diameter of Saw Blade (mm)				
	$\Phi 250$	$\Phi 275$	$\Phi 300$	$\Phi 350$	
6~10	T=180	200	200	220	
10~14	160	160	180	200	
14~18	150	160	160	180	
18~22	120	150	150	160	
22~28	90	90	120	160	
28~35	80	80	90	120	
35~45	70	70	80	90	
45~50	64	64	70	80	

For size of Bar ≥ 38 mm, the Formula for Number of Tooth T is as following

$$T = 4 \times (\text{Diameter of Saw Blade} \times 3.14) \div (\text{Size of Bar})$$

1. For stainless steel, the number of tooth is one grade more than mild steel.
2. For aluminum and copper, the number of tooth is one grade less than mild steel.
3. For 45° miter cutting, the number of tooth is one grade less than 90° cutting.

5.1.3 Adjustment of the Saw blade Low Stop Position

- (1) Pull down the handle to the position that the saw blade just breaks through the work piece.
- (2) Adjust the bolt and lock nut that is under the saw head to just stop the saw head going down.

5.1.4 Adjustment of the Saw Blade Rotating Speed

Turn the saw blade speed-selecting switch to one of "LOW", "HI" or "OFF" position.

5.1.5 Adjustment of the Miter Cutting

- (1) Push the turning table fixing handle leftward.
- (2) Turn the turning table to the required angle.
- (3) Push the fixing handle rightward.

5.2 Steps of Operation

- (1) Prepare the machine as states in Section 5.1.
 - (2) Put a work piece into vise.
 - (3) Turn the clamping vise hand wheel to clamp the work piece.
 - (5) Pull down the handle and press trigger switch.
 - (6) The saw blade starts rotating. The coolant starts flowing out of nozzle.
 - (7) Continue to pull down the handle until the saw blade cuts off the work piece.
 - (8) Release the trigger switch and let the saw head moves up slowly.
 - (9) Turn the clamping vise hand wheel to release the work piece.
- Repeat step (2) through (9) to finish the job.

NOTE: Release the trigger switch immediately if any malfunction or abnormal situation happens.

5.3 Daily Inspection and Maintenance

5.3.1 Gear Box of Cutting Head

- (1) Change gear oil (SAE 140) every six months (3.7 liters are required).
- (2) Check temperature of the gearbox during continuous operation.

5.3.2 Chip Collecting Tray

Remove chip from collecting tray everyday.

6. ELECTRICAL SYSTEM DIAGRAM

H0EX03-0004 (1/1)

[illegible]



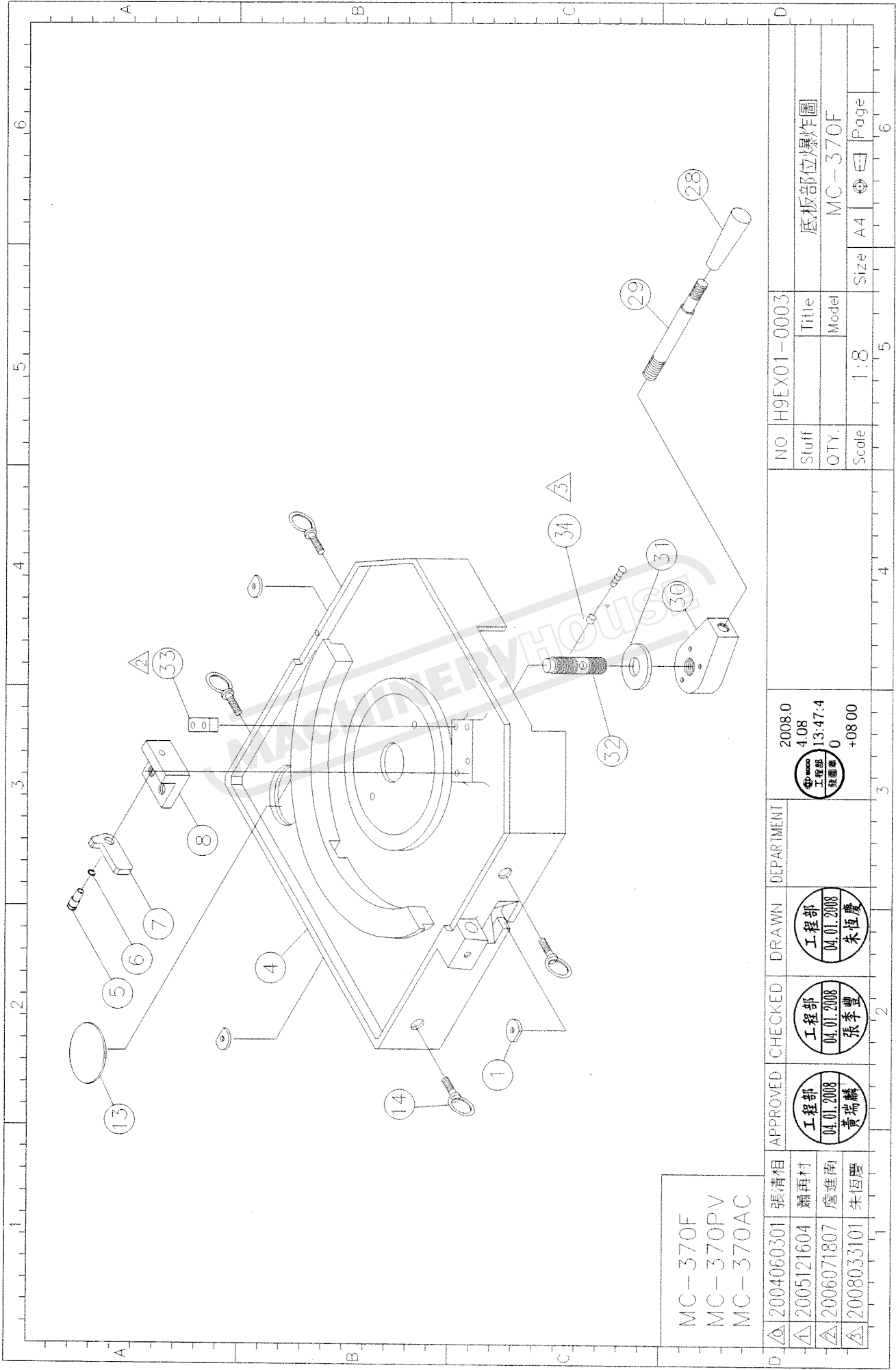
H0EX14-0002 (1/1)

[illegible]



H9EX01-0003 (1/1)

[illegible]



MC-370F
MC-370PV
MC-370AC

NO	H9EX01-0003			NO	H9EX01-0003		
Stuff				Title	底板部位爆炸圖		
QTY				Model	MC-370F		
Scale	1:8			Size	A4	Page	6

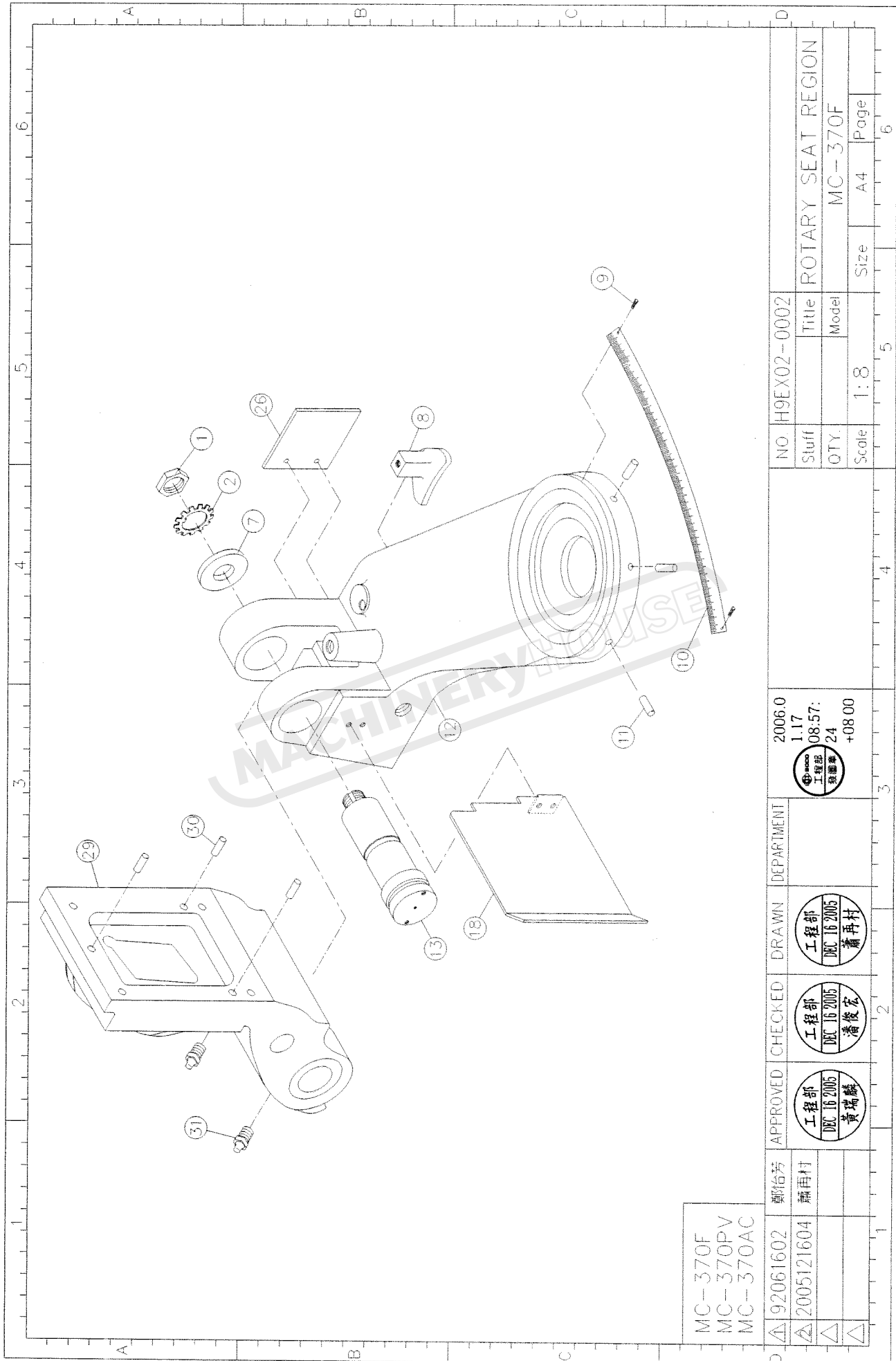
2008.0
4.08
13:47:4
0
+08 00

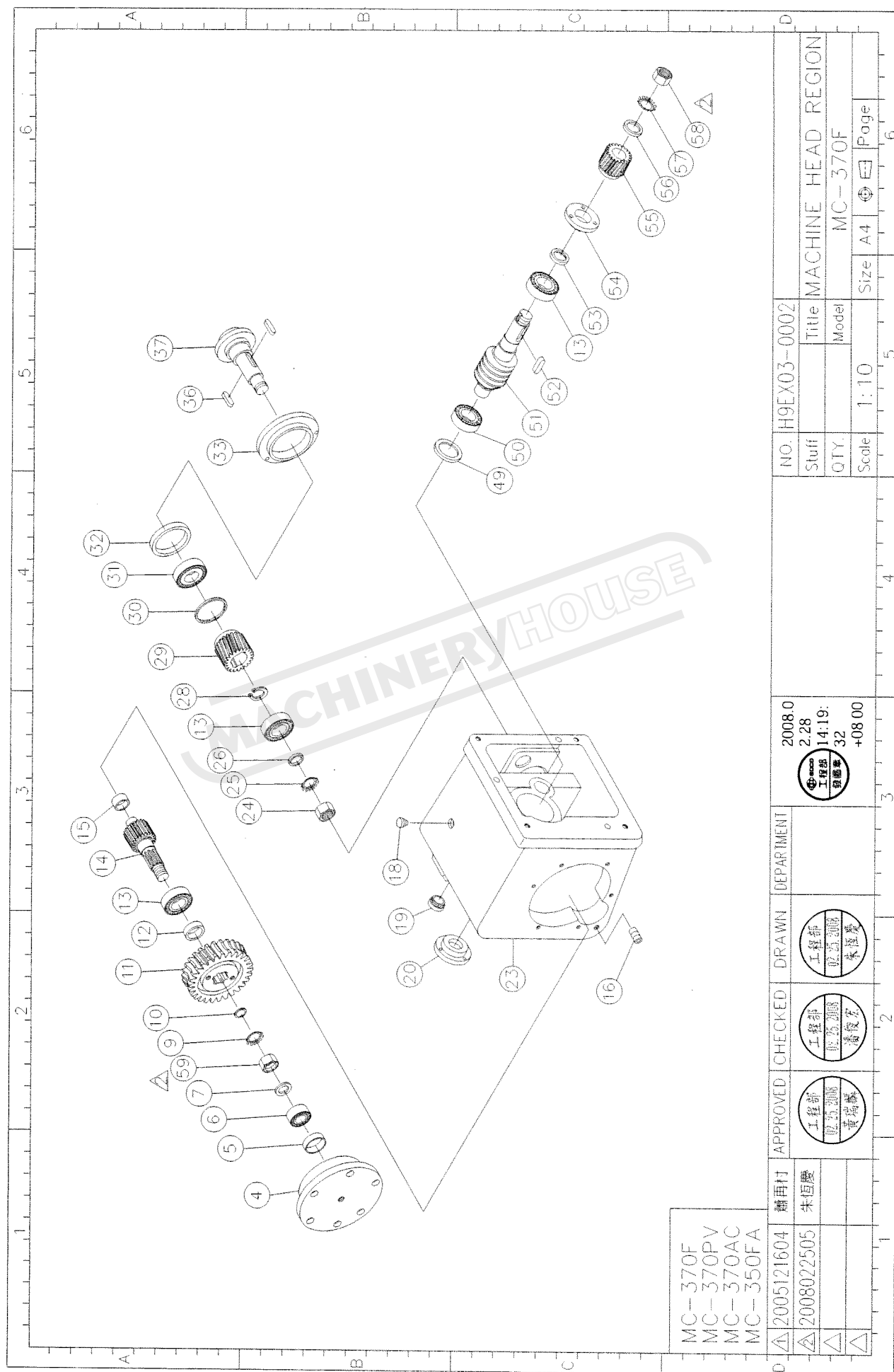
APPROVED	CHECKED	DRAWN	DEPARTMENT
工程組 04.01.2008 黃瑞麟	工程組 04.01.2008 張季豐	工程組 04.01.2008 朱恆慶	

2004060301	張清相
2005121604	蕭再村
2006071807	詹維南
2008033101	朱恆慶

H9EX02-0002 (1/1)

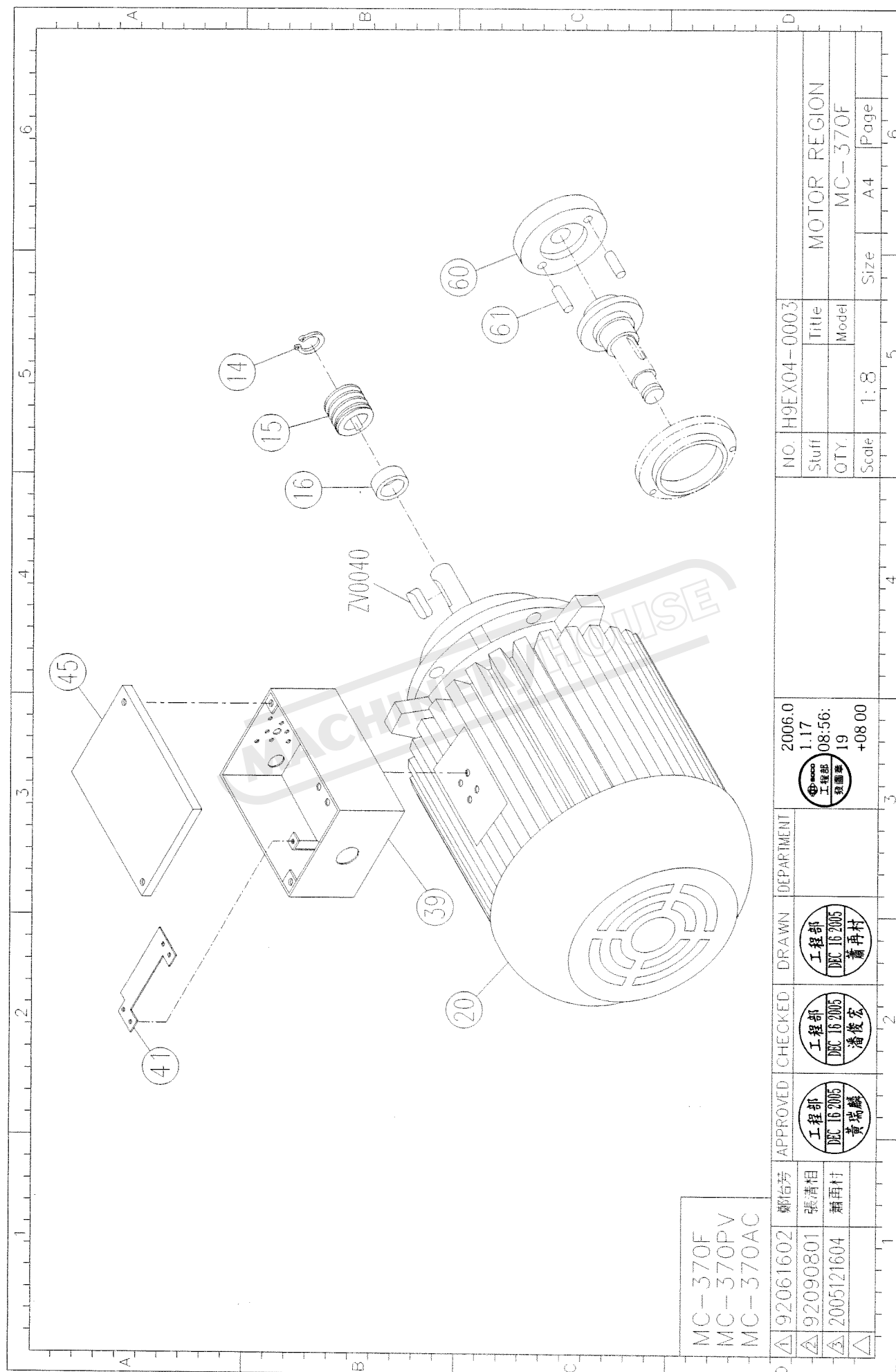
[illegible]



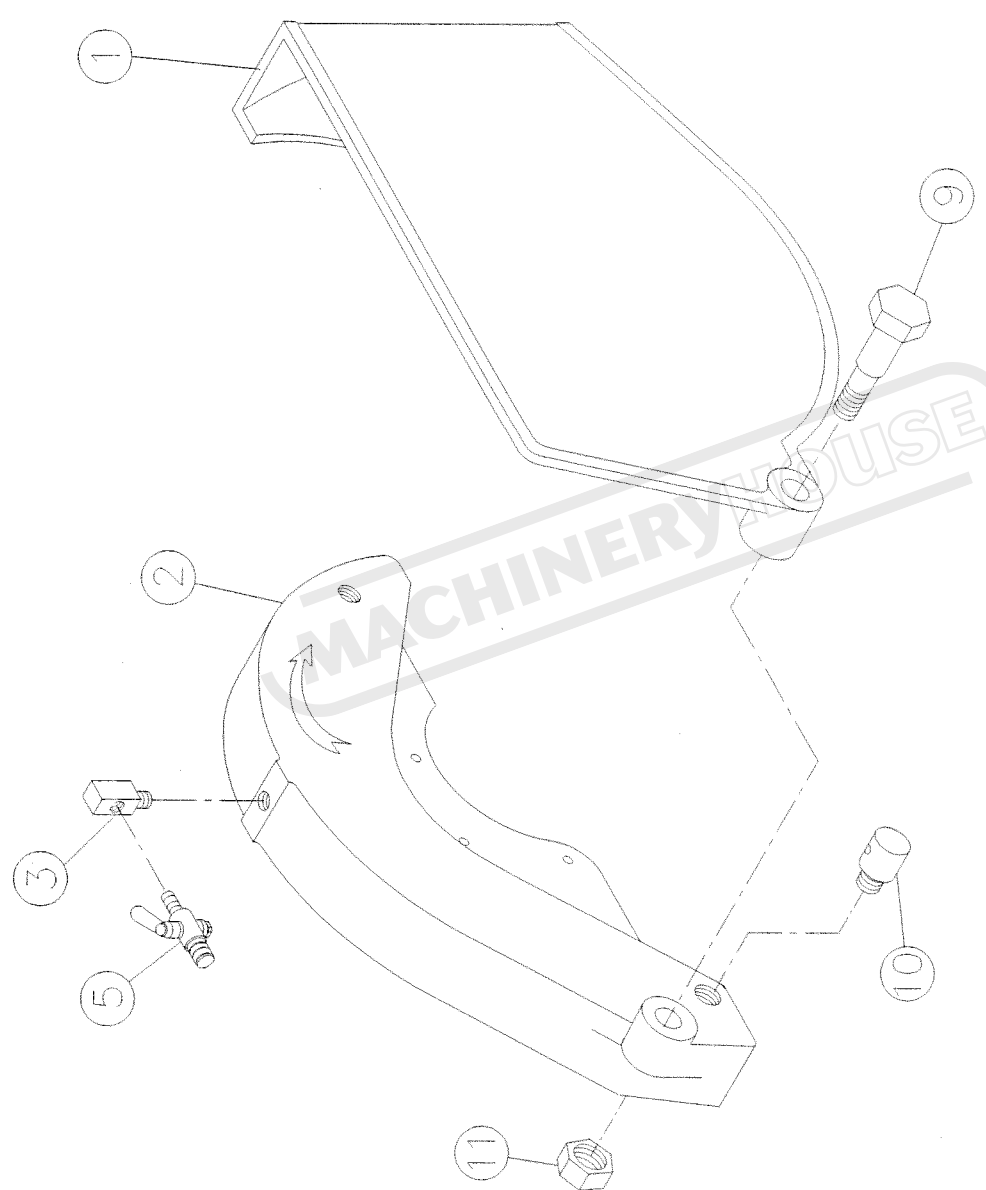


H9EX04-0003 (1/1)

[illegible]

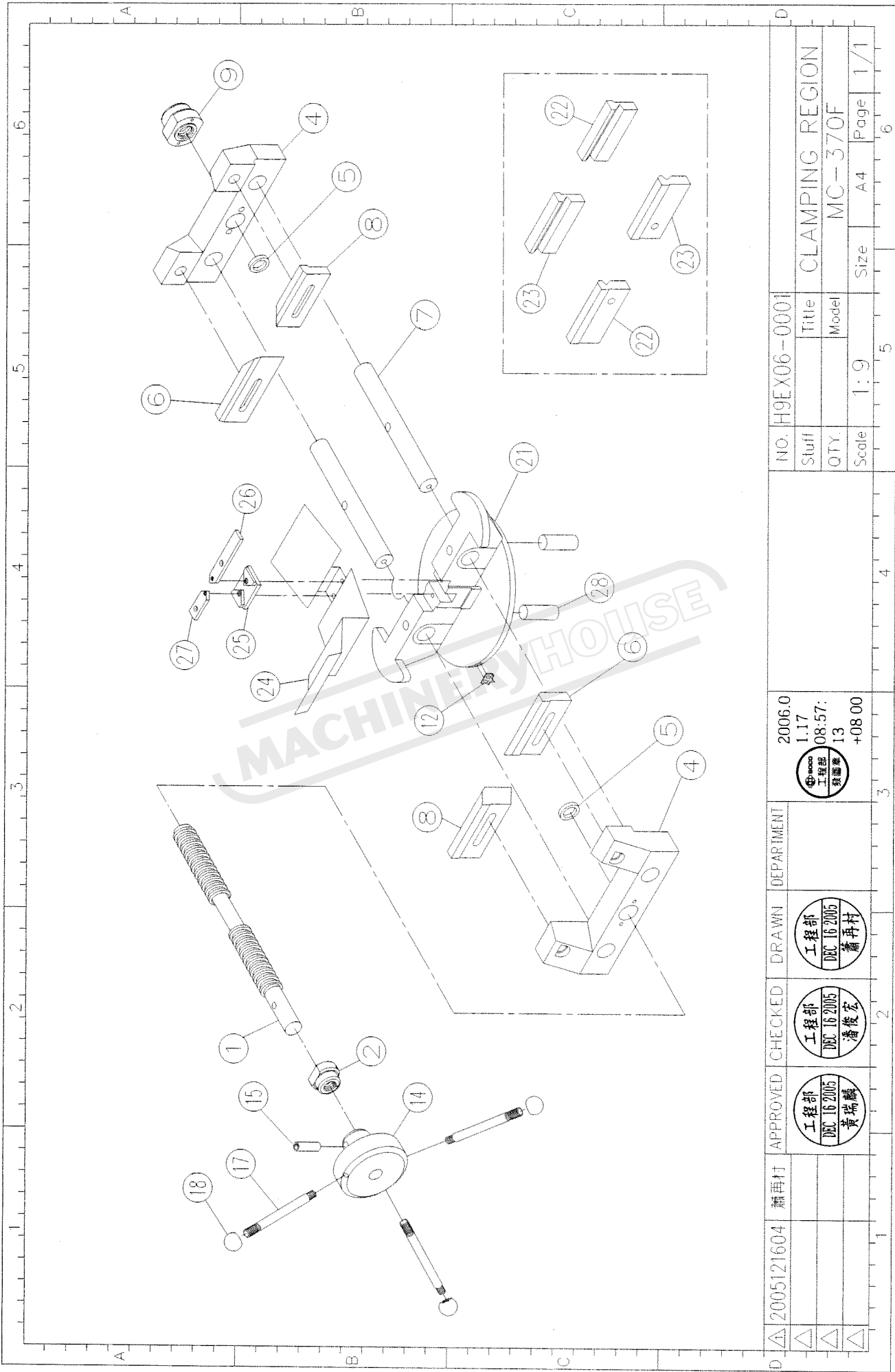


[illegible]



H9EX06-0001 (1/1)

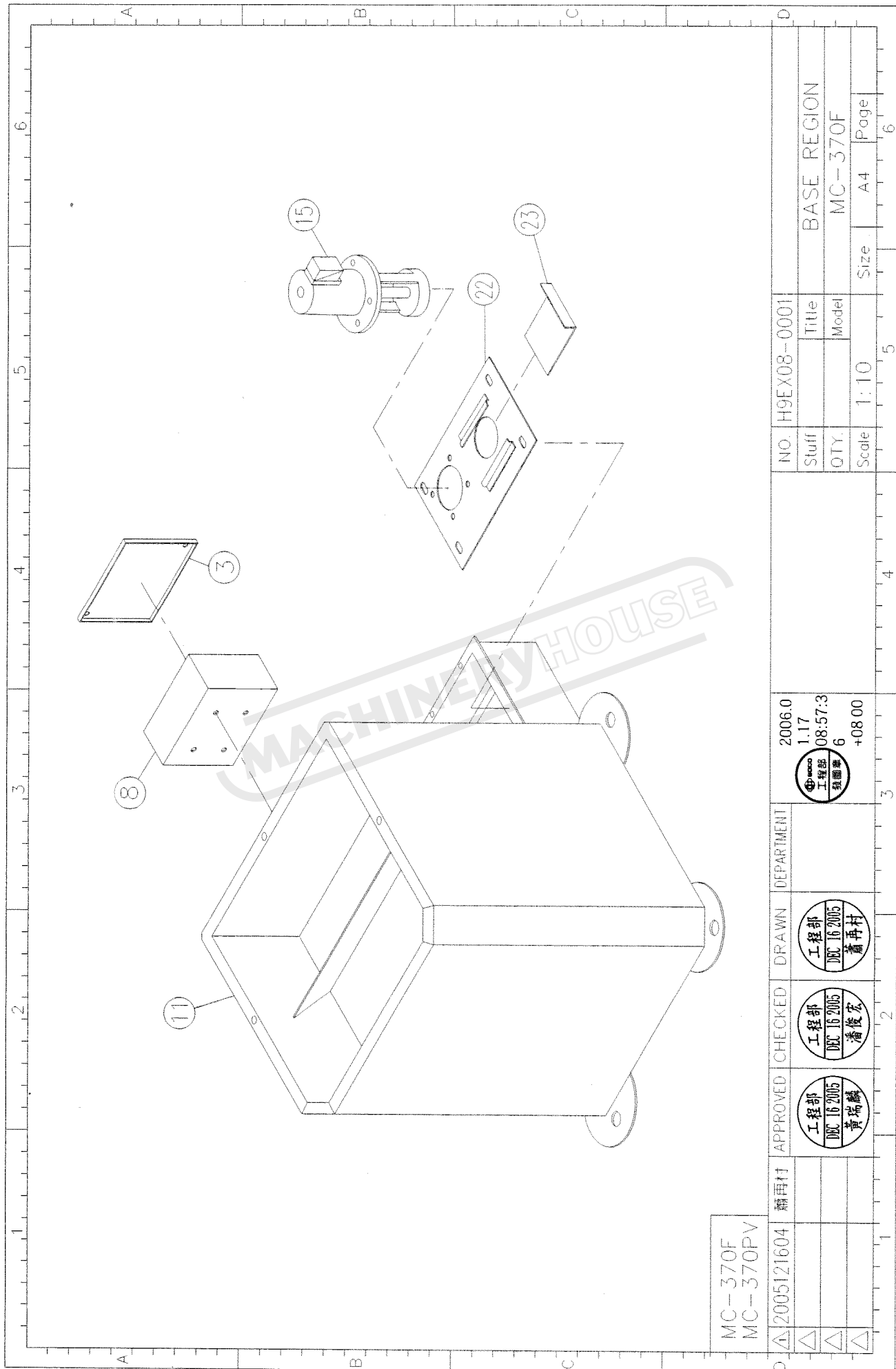
[illegible]



D	△	2005121604	蘇再村	APPROVED	CHECKED	DRAWN	DEPARTMENT	2006.0 1.17 08:57: 13 +08 00	NO. H9EX06-0001	D				
	△			工程組 DEC 16 2005 黃瑞麟	工程組 DEC 16 2005 潘俊宏	工程組 DEC 16 2005 蕭再村			Stuff	Title	CLAMPING REGION			
	△							13	QTY.	Model	MC-370F			
	△							+08 00	Scale	1:9	Size	A4	Page	1/1

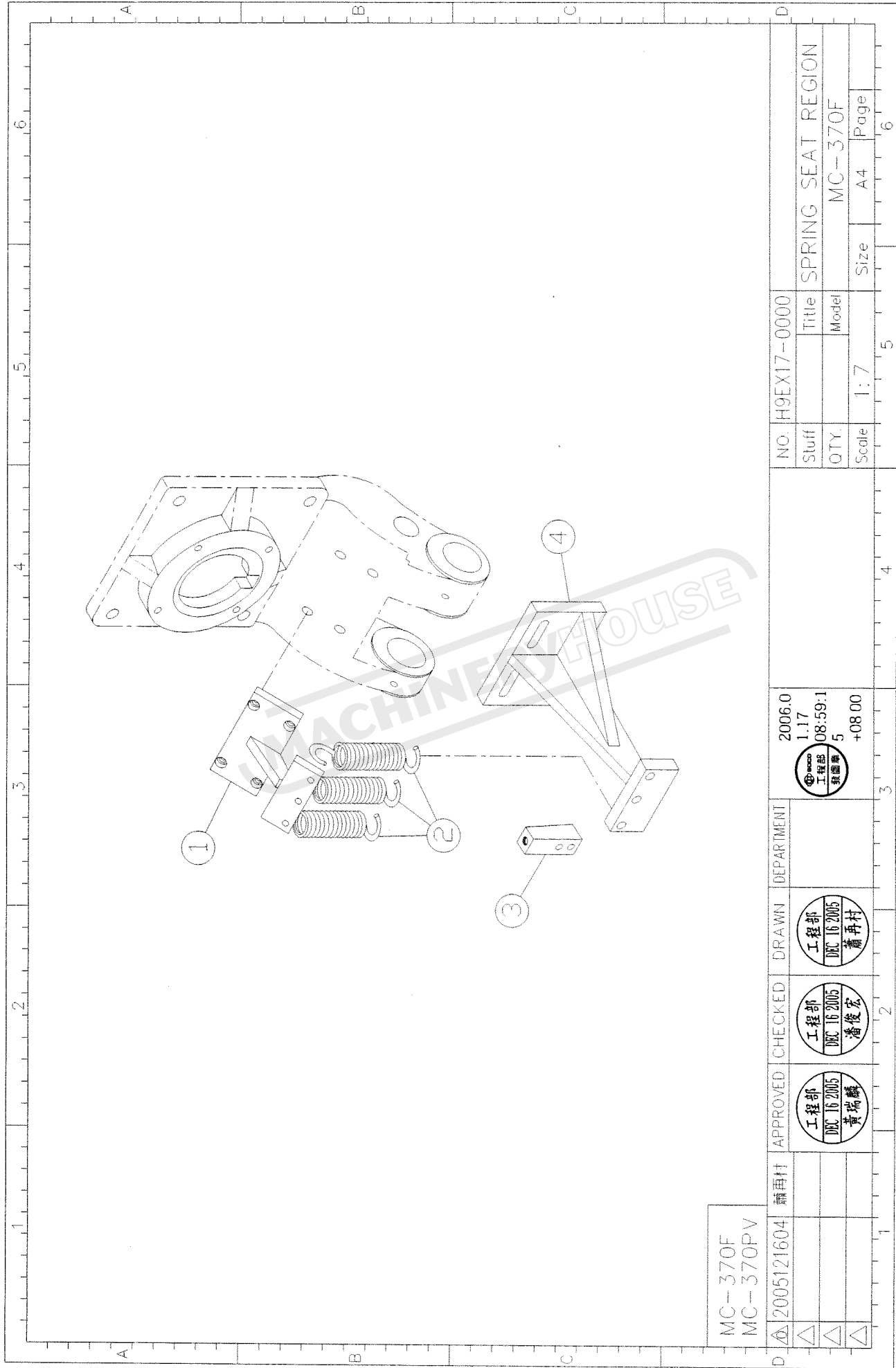
MC-370F

[illegible]

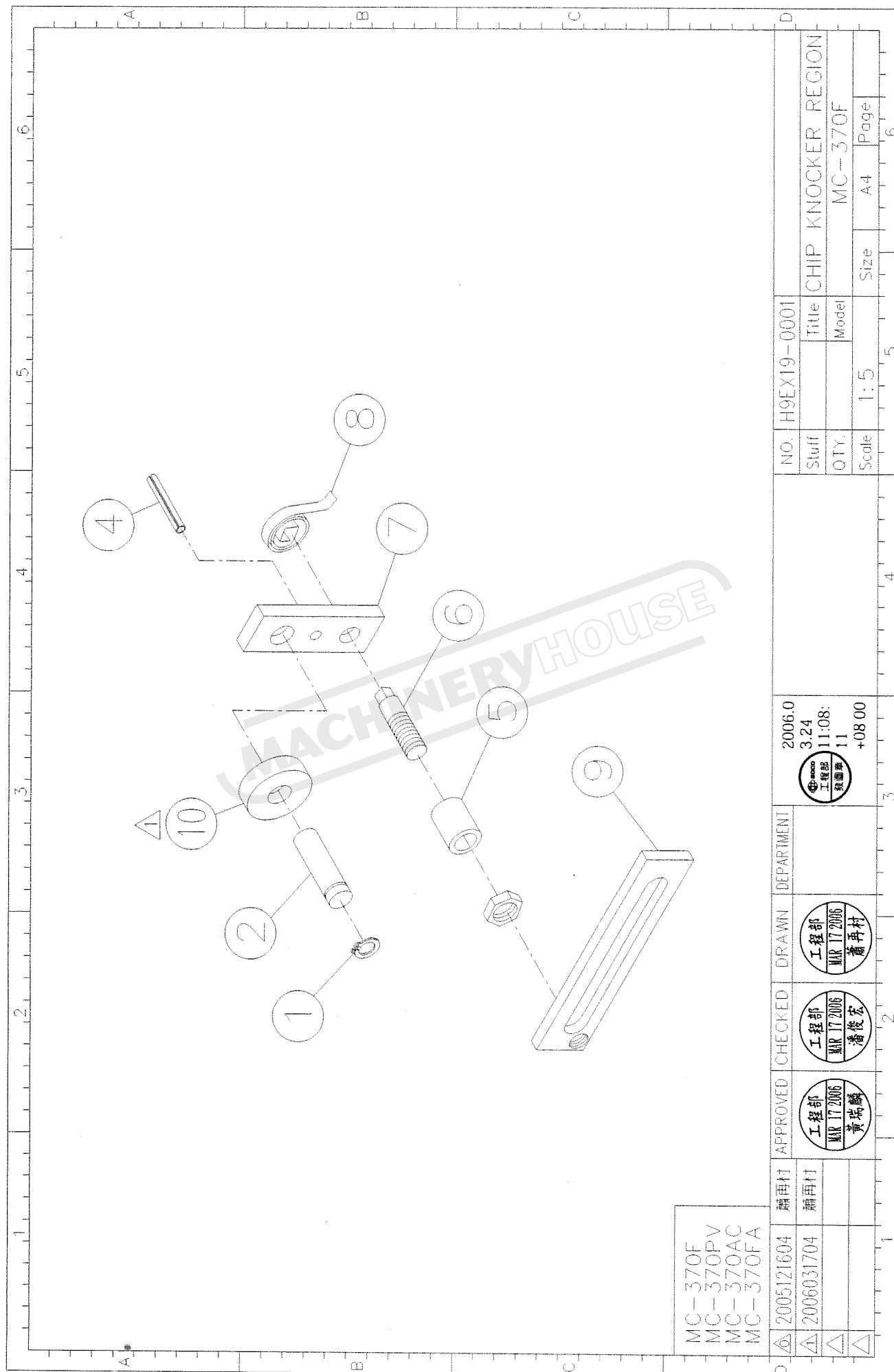


MC-370F

[illegible]

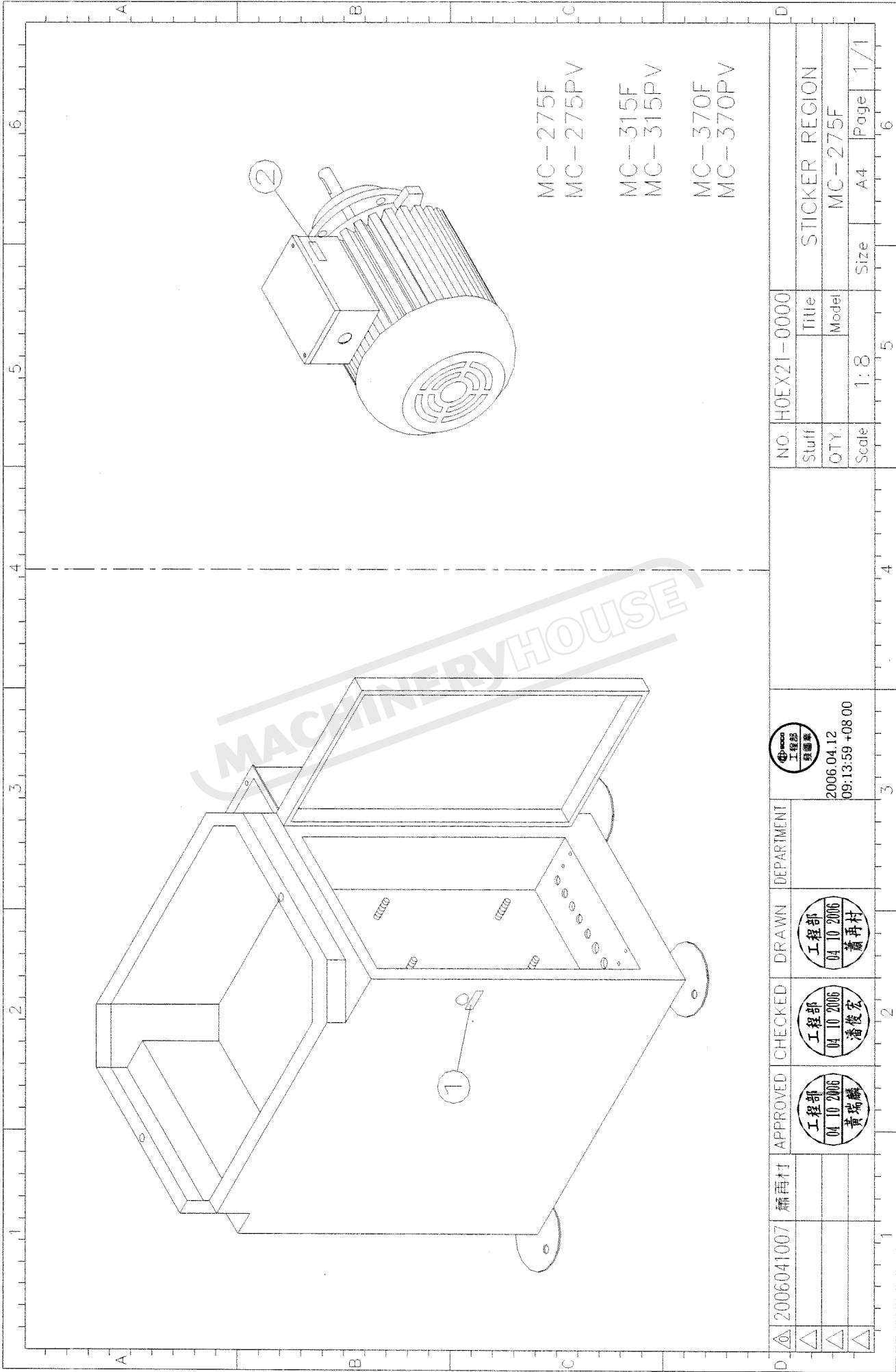


[illegible]



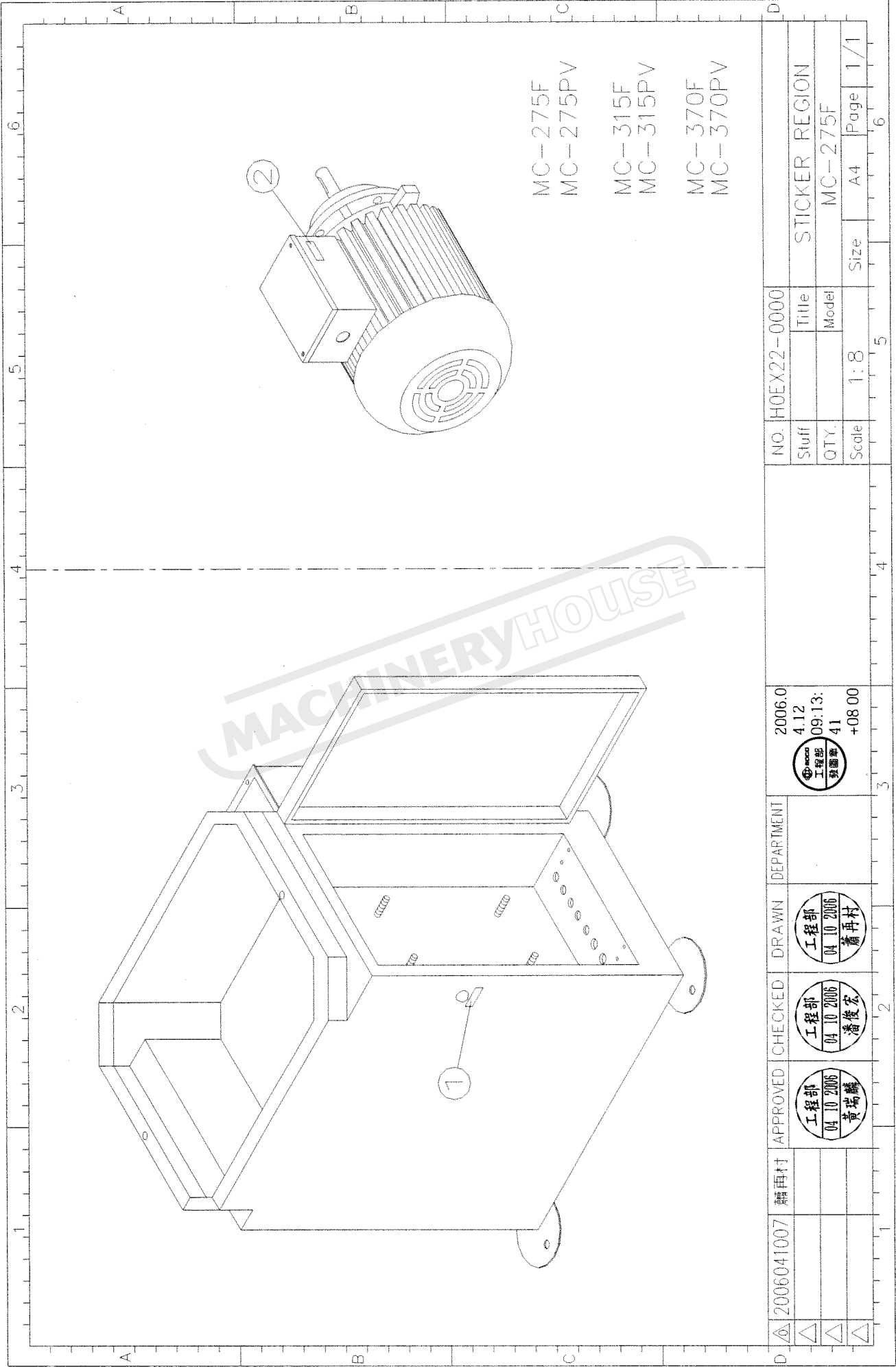
H0EX21-0000 (1/1)

[illegible]



△	2006041007	蕭再村	APPROVED	04 10 2006	黃瑞麟	CHECKED	04 10 2006	潘俊宏	DRAWN	04 10 2006	蕭再村	DEPARTMENT	2006 04 12 09:13:59 +08 00	NO. H0EX21-0000	STICKER REGION	MC-275F	1/1
△														Staff	Title	Model	Page
△														QTY.			1/1
△														Scale	1:8	Size	Page

[illegible]



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.



WARNING

Metal Cutting Coldsaw Safety Instructions

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

- 1. Maintenance.** Make sure the saw 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. Saw Condition.** Saw must be maintained for a proper working condition. Never operate a saw that has damaged or worn parts. Scheduled routine maintenance should be performed on a scheduled basis.
- 3. Blade Condition.** Never operate a saw with a dull, cracked or badly worn blade. Before using a saw inspect blades for missing teeth and cracks.
- 4. Replacing Blade.** Make sure teeth are facing the correct direction. Wear gloves to protect hands.
- 5. Hand Hazard.** Keep hands and fingers clear from the line of cut of the blade and offcuts workpieces. Hands can be crushed in vice or from falling machine components and cut by the blade.
- 6. Leaving a saw Unattended.** Always turn the saw off and make sure all moving parts have come to a complete stop before leaving the saw. Do not leave saw running unattended for any reason.
- 7. Avoiding Entanglement.** Blade guard must be used at all times. 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 saw moving parts.
- 8. Understand the machines controls.** Make sure you understand the use and operation of all controls.
- 9. Power outage.** In the event of a power failure during use of the saw, turn off all switches to avoid possible sudden start up once power is restored.
- 10. Work area hazards.** Keep the area around the saw clean from oil, tools, chips. Pay attention to other persons in the area and know what is going on around the area to ensure unintended accidents.
- 11. Workpiece Handling.** Workpieces must be supported with table, vice, roller conveyor/stands, or other support fixtures. Unsupported workpieces may cause the machine to tip over and fall. Flag long pieces of material to avoid tripping hazards. Never hold a workpiece with your hands during the cut process.
- 12. Hearing protection and hazards.** Always wear hearing protection as noise generated from saw blade and workpiece vibration, material handling, and power transmission can cause permanent hearing loss over time.
- 13. Hot surfaces.** Workpieces, machine surfaces and chips become hot due to friction and can burn you.
- 14. Starting position.** Never turn the saw on when the blade is resting on the workpiece.
- 15. Guards.** Do not operate saw without the blade guard in place.
- 16. Call for help.** If at any time you experience difficulties, stop the machine and call your nearest branch service department for help.

PLANT SAFETY PROGRAM

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Metal Cutting Coldsaw

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 Long / heavy material
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Isolate main power switch before changing blade, cleaning or adjusting. Check blade is tight and in good condition before starting. Make sure blade guard is down in correct position when machine is on.
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	LOW	Support long heavy jobs and stand clear of offcuts falling. Remove all loose objects around moving parts. Wear safety glasses.
H	ELECTRICAL	MEDIUM	All electrical enclosures should only be opened with a tool that is not to be kept with the machine.
O	OTHER HAZARDS, NOISE.	LOW	Machine should be installed & checked by a Licensed Electrician. 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:

Revised Date: Aug-08