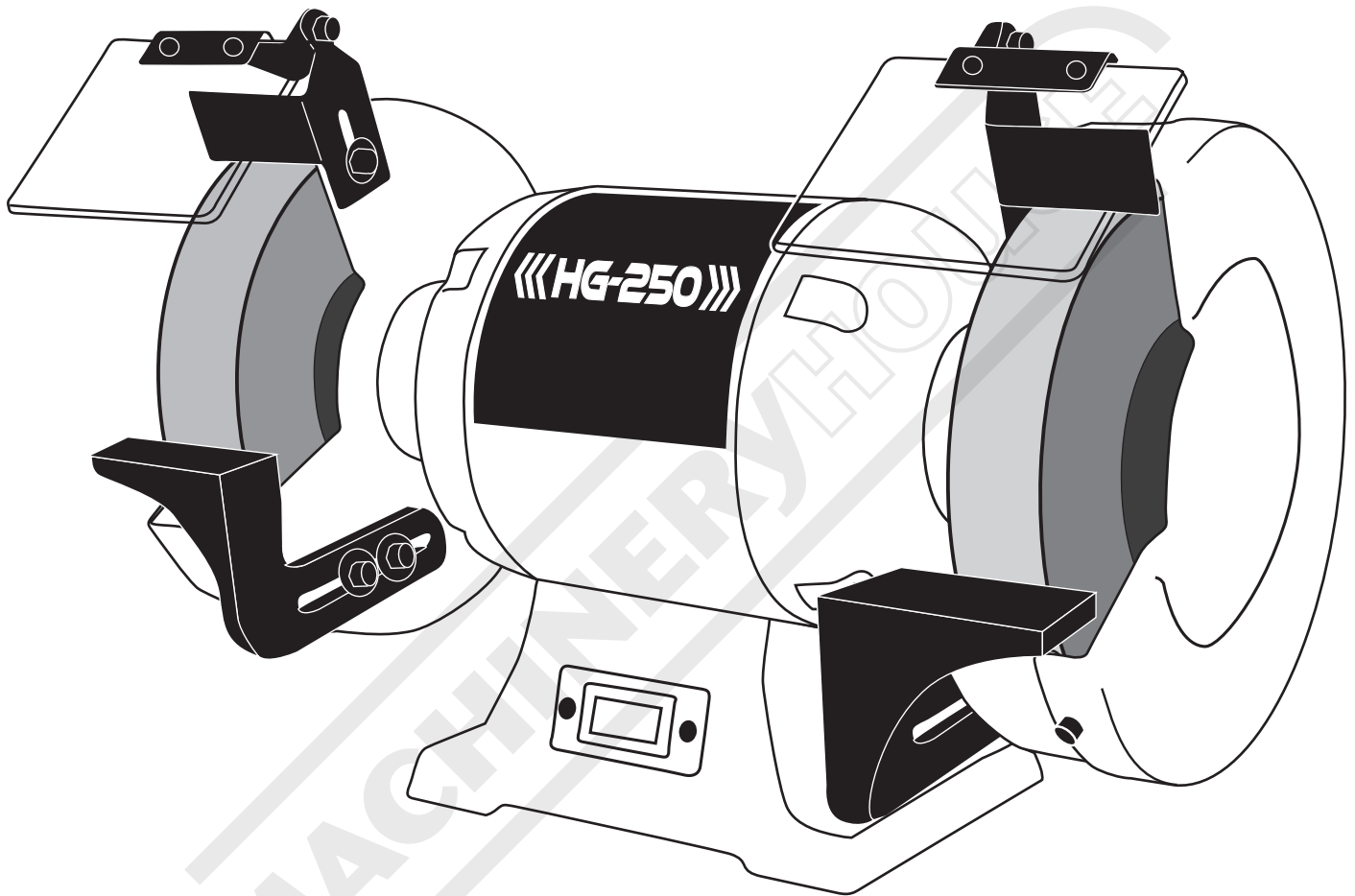


# **HAFCO**

# **METALMASTER**



Edition : 1.0  
Date: (03/25)

## **Instruction Manual**

# **INDUSTRIAL BENCH GRINDER**

# **HG-250**

Order Code: (G146)

### 1.1 SPECIFICATIONS

|                                |                   |
|--------------------------------|-------------------|
| Order Code                     | G146              |
| <b>MODEL</b>                   | <b>HG-250</b>     |
| Grinder Type                   | Bench             |
| Grinding Wheel Diameter        | 250mm             |
| Grinding Wheel Width           | 25mm              |
| Wheel Grade (Type)             | Fine & Course     |
| Linishing Attachment           | Optional          |
| Spindle Diameter               | 19.5mm            |
| Spindle Shaft Thread Size      | M18               |
| Spindle Speed                  | 2850rpm           |
| Motor Power                    | 0.75kW / 1hp      |
| Voltage / Amperage             | 240V / 10amp      |
| Machine Dimensions (L x W x H) | 560 x 350 x 380mm |
| Nett Weight                    | 32.5kg            |

### 1.2 ELECTRICAL REQUIREMENTS

|                      |              |
|----------------------|--------------|
| Nominal Voltage      | 240V         |
| Cycle                | 50 Hz        |
| Phase                | Single Phase |
| Power Supply Circuit | 10 Amps      |
| Full Load Current    | 4.5 Amps     |



**DO NOT** use this machine unless you have read the manual or have been trained and assessed to a competent level in its safe use and operation.



*Safety glasses & Hearing protection must be worn when operating this equipment*



*Long and loose hair must be contained when operating this equipment.*



*Safety footwear must be worn when operating this equipment*



*Close fitting/protective clothing must be worn when operating the machine*



*Dust mask must be worn when operating in high dust areas.*

### 2.1 PRE-OPERATIONAL SAFETY CHECKS

1. Check workspaces and walkways to ensure no slip/ trip hazards are present.
2. Ensure all guards and safety shields (spark deflectors) are in position before starting the grinder.
3. Check that electrical cords are not damaged.
4. Ensure that the grinding wheels are properly 'dressed' and that wheels do not touch the tool rest and that the gap between wheel and rest is no greater than 1.5 mm.
5. Check that grinding wheels are running true (regularly dressed) and are not glazed or loaded.
6. Locate and ensure you are familiar with the operation of the ON/OFF start switch and the Emergency Stop button (where fitted).
7. Faulty equipment must not be used. Immediately report and repair any damaged machinery.

### 2.2 OPERATIONAL SAFETY CHECKS

1. Stand to the side of the wheels when starting up.
2. Let the wheels gain maximum speed before starting to grind.
3. Do not grind on the side of the wheel.
4. Small objects must not be held by hand.
5. Workpiece must never be held with gloves, cloth, apron or pliers.
6. Never leave the machine running unattended.
7. Do not bend down near the machine whilst it is running.
8. Never force the workpiece against a wheel.
9. Slowly move the workpiece across the face of the wheel uniformly. Do not use the side of the grinding wheel to grind workpieces.
10. Coolant spilt on the floor should be immediately cleaned up with absorbent material.

### 2.3 AFTER OPERATION

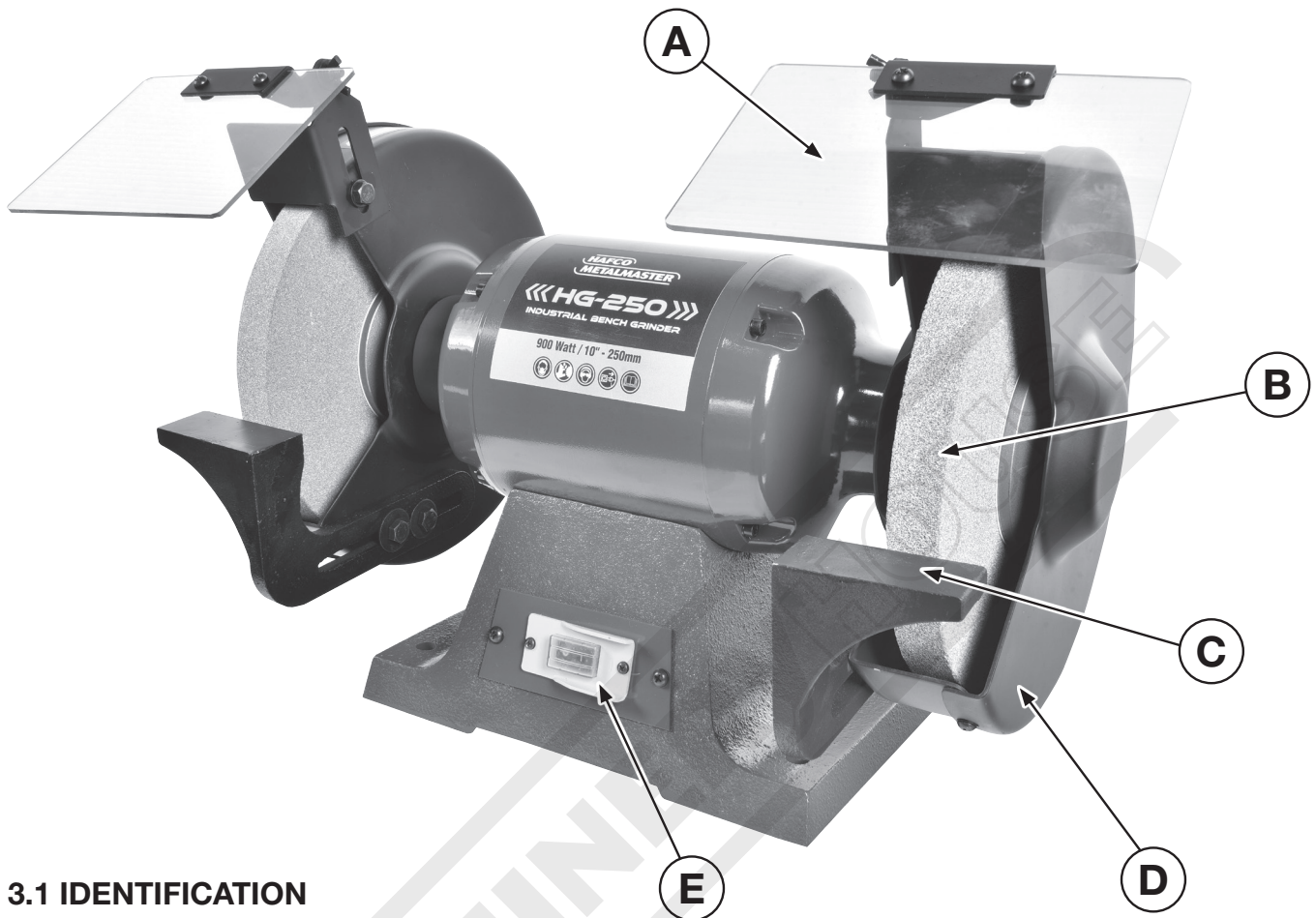
1. Switch off the grinder at the end of work and switch off at power point.
2. Check that power leads have not been damaged during use.
3. Clean swarf and leave the machine in a safe, clean and tidy state.

### 2.4 POTENTIAL HAZARDS

1. Hot metal – use appropriate tools to manage heat.
2. Sparks – fit spark arresters.
3. Noise – wear approved hearing protection.
4. Eye injury – wear approved eye PPE.

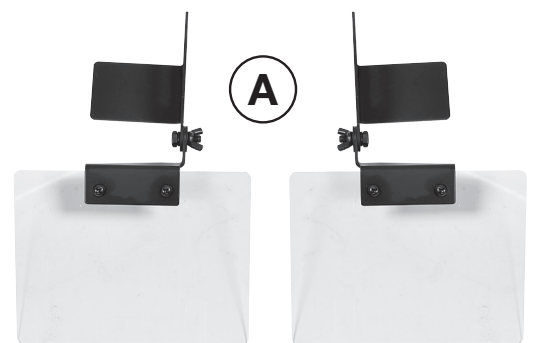
### 3.0 IDENTIFICATION

Become familiar with the names and locations of the controls and features shown below to better understand the instructions when mentioned later in this manual.



#### 3.1 IDENTIFICATION

| Description                  | G146 |
|------------------------------|------|
| Eye Shield / Spark Deflector | A    |
| Grinding Wheel               | B    |
| Tool Rest                    | C    |
| Wheel Guard                  | D    |
| ON/OFF Switch                | E    |



#### 3.2 EYE SHIELDS & TOOL RESTS

| Description    | G146 |
|----------------|------|
| Eye Shield x 2 | A    |
| Tool Rest x 2  | C    |



The images shown are for illustration purposes only and may not be an exact representation of the product.

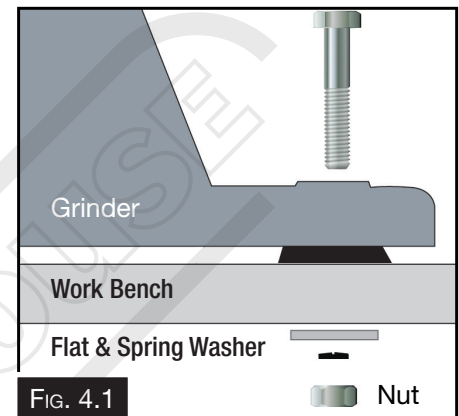
### 4.1 ASSEMBLY

The machine must be fully assembled before it can be operated. First clean any parts that are coated in rust preventative to ensure the assembly process can proceed smoothly.

### 4.2 MOUNTING THE GRINDER

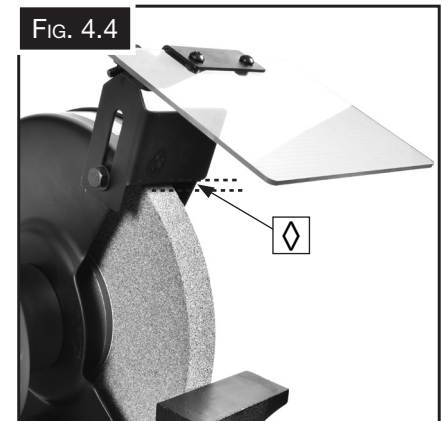
The grinder is provided with rubber pads to help prevent movement on a bench. For best results, however, it is recommended the grinder be bolted to the work surface or a grinder stand. (fasteners not included).

1. Align mounting holes on grinder with pre-drilled holes in a bench or grinder stand.
2. Insert bolts through the holes, and tighten using flat and spring washers and nuts. (Fig. 4.1)



### 4.3 EYE SHIELDS

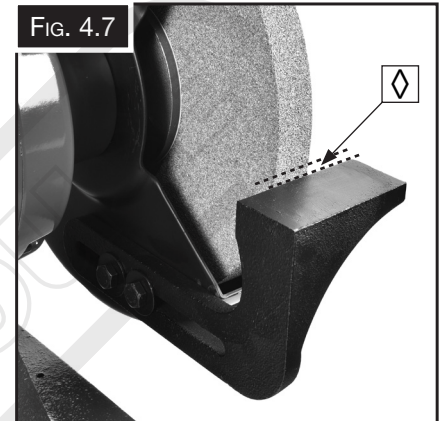
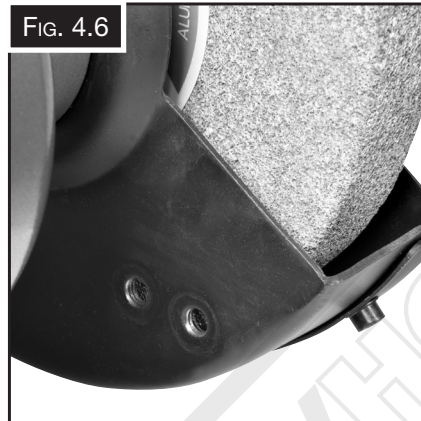
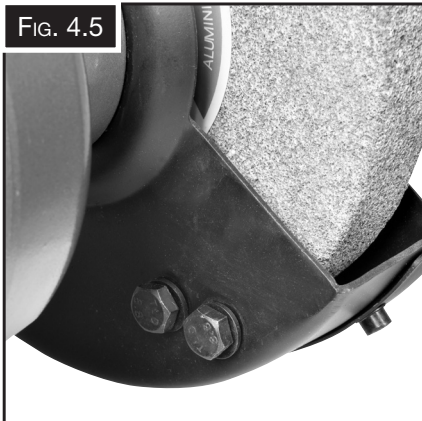
1. Remove hex nut / washer from grinder cover and attach eye shield. (Fig. 4.2)
2. Align eye shield bracket at 90° to the grinding wheel. and making sure that there is only a  $\diamond$  1.5mm gap between the wheel and the spark arrestor.
3. Replace hex nut / washer and tighten. (Fig. 4.4)
4. Install the other eye shield assembly in the same manner.



The images shown are for illustration purposes only and may not be an exact representation of the product.

#### 4.4 TOOL RESTS

1. Install the tool rest bracket by removing the two hex head screws and two flat washers (Fig. 4.5)
2. Place the tool rest over the wheel guard (D) and secure with two hex head screws and two flat washers, making sure that there is only a  $\diamond$  1.5mm gap between the wheel and the tool rest. (Fig. 4.7)
3. Install the other tool rest in the same manner.



The images shown are for illustration purposes only and may not be an exact representation of the product.



#### **WARNING.**

**Before connecting the grinder to the power, rotate the wheels by hand to ensure that the wheels clear the tool rests and guards**



## 5.1 TEST RUN

Once assembly is complete, test run the machine to ensure it is properly connected to the power and safety components are functioning correctly. Check that the direction of the motor is correct and make sure that the machine rotates in the correct direction.

If the direction is incorrect, isolate the machine and have the electrician make changes to the wiring.

If you find an unusual problem during the test run, immediately stop the machine, disconnect it from power, and fix the problem BEFORE operating the machine again. If the problem persists the contact your dealers service technician.

### To test run the machine:

1. Connect the machine to the power supply.
2. Make sure that the manual has been read and that the safety instructions at the beginning of the manual are understood. Make sure the machine has been setup correctly.
3. Make sure all tools and objects used during set up have been cleared away from the machine.
4. Turn the machine ON.
5. Make sure that the motor is traveling in the correct direction.
6. Listen to and watch for abnormal noises or actions. The machine should run smoothly with little or no vibration or rubbing noises.
7. Any strange or unusual noises should be investigated and corrected before operating the machine again. Always disconnect the machine from power supply when investigating or correcting potential problems.

## 5.2 WHEEL OVERVIEW

A bench grinder is designed for hand-grinding operations such as sharpening chisels, screwdrivers, drill bits, removing excess metal, and smoothing metal surfaces.

**A Medium Grain Abrasive Grinding Wheel** is suitable for rough grinding where a considerable amount of metal must be removed or when obtaining a smooth finish is not important.

**A Fine Grain Abrasive Grinding Wheel** should be used for sharpening tools to close size tolerances because it removes metal more gradually for precision grinding and gives work a smooth finish.

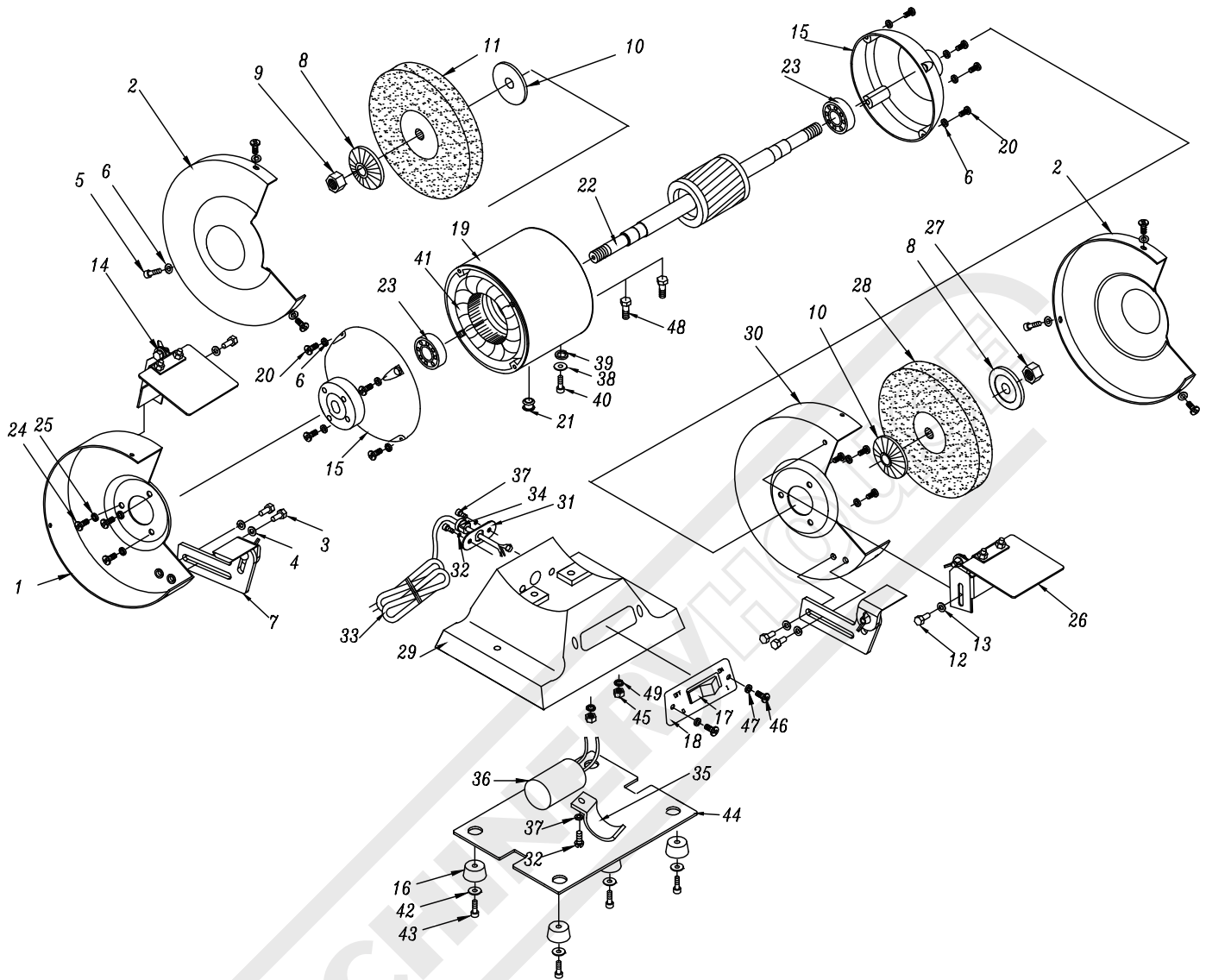
## 5.3 CHANGING WHEELS

If you must replace a wheel be sure to obtain one with a safe rated speed at least as high as the NO LOAD RPM marked on the grinder's nameplate. See below for replacement wheel specifications.

| MODEL  | WHEEL DIAMETER | MAXIMUM WIDTH | CENTRE BORE Ø |
|--------|----------------|---------------|---------------|
| HG-250 | Ø250MM         | 25MM          | Ø32MM         |

Test new wheels for cracks and maintain the existing sequence of retaining hardware. Be sure the grinder is unplugged before attempting repairs.

## 6.0 PARTS DIAGRAM



| Part No. | Description          | Qty |
|----------|----------------------|-----|
| 1        | Left Wheel Guard     | 1   |
| 2        | Left & Right Cover   | 2   |
| 3        | Bolt M8x16mm         | 4   |
| 4        | Washer 8mm           | 4   |
| 5        | Screw M5x8mm         | 6   |
| 6        | Washer 5mm           | 14  |
| 7        | Left Adjustable Rest | 1   |
| 8        | Outside Flange       | 2   |
| 9        | Left Turning Nut M18 | 1   |
| 10       | Inside Flange        | 2   |
| 11       | Left Wheel 60#       | 1   |
| 12       | Bolt M6x8mm          | 2   |
| 13       | Washer 6mm           | 2   |
| 14       | Left Eye Shield      | 1   |
| 15       | Motor End Bell       | 2   |
| 16       | Foot Pad             | 4   |
| 17       | Switch               | 1   |

| Part No. | Description           | Qty |
|----------|-----------------------|-----|
| 18       | Switch Plate          | 1   |
| 19       | Motor Body            | 1   |
| 20       | Screw M5x20mm         | 8   |
| 21       | Housing               | 1   |
| 22       | Motor Rotor           | 1   |
| 23       | Bearing               | 2   |
| 24       | Screw M6x12           | 6   |
| 25       | Washer 6mm            | 6   |
| 26       | Right Eye Shield      | 1   |
| 27       | Nut M18               | 1   |
| 28       | Right Wheel 36#       | 1   |
| 29       | Base                  | 1   |
| 30       | Right Wheel Guard     | 1   |
| 31       | Clamping Plate        | 1   |
| 32       | Screw M5x10mm         | 3   |
| 33       | Power Cable with Plug | 1   |
| 34       | Strain Relief         | 1   |

| Part No. | Description      | Qty |
|----------|------------------|-----|
| 35       | Capacitor Holder | 1   |
| 36       | Capacitor        | 1   |
| 37       | Washer 5mm       | 3   |
| 38       | Washer 6mm       | 1   |
| 39       | Washer 5mm       | 1   |
| 40       | Screw M5x10mm    | 1   |
| 41       | Motor Stator     | 1   |
| 42       | Washer 5mm       | 4   |
| 43       | Screw M5x16mm    | 4   |
| 44       | Base Plate       | 1   |
| 45       | Nut M8           | 2   |
| 46       | Screw M3x12mm    | 2   |
| 47       | Washer 3mm       | 2   |
| 48       | Bolt M8x25mm     | 2   |
| 49       | Washer 8mm       | 2   |
|          |                  |     |
|          |                  |     |



# SPARE PARTS SECTION

## 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

**NOTE: SOME PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY**

2. Go to [www.machineryhouse.com.au/contactus](http://www.machineryhouse.com.au/contactus) and fill out the inquiry form

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# **WARNING**

## **General Machinery Safety Instructions**

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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

## Grinder Safety Instructions

---

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

- 1. Maintenance.** Make sure the Grinder 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. Grinder Wheel Condition.** Grinder must be maintained for a proper working condition. Never operate a Grinder with a damaged or badly worn wheel. Replace if required. Scheduled routine maintenance should be performed on a scheduled basis.
- 3. Secure your grinder.** Make sure you firmly secure your grinder to a stand or workbench. An unsecured grinder can become dangerously out of control during operation.
- 4. Hand Hazard.** Keep a firm grip of material and position your hands a safe distance away when grinding. Serious injury can occur if hand or finger tips come in contact with grinding wheels, abrasives or moving parts.
- 5. Leaving a Grinder Unattended.** Always turn the Grinder off and make sure all moving parts have come to a complete stop before leaving the Grinder. Do not leave Grinder running unattended for any reason.
- 6. Avoiding Entanglement.** Grinder guards 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 Grinder moving parts.
- 7. Understand the machines controls.** Make sure you understand the use and operation of all controls.
- 8. Power outage.** In the event of a power failure during use of the machine, turn off all switches to avoid possible sudden start up once power is restored.
- 9. Work area hazards.** Keep the area around the Grinder 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.
- 10. Starting Grinder.** If a wheel is damaged it may fly apart shortly after start up. To avoid any injury, always stand to the side of the grinder when turning it on, allow it to gain full speed and wait for 1 minute before standing in front of grinder.
- 11. Workpiece Handling.** Never hold small workpieces with your fingers during grinding. Always support the workpiece with table support, or some sort of clamping fixture. Never use excessive force when grinding or serious injury can occur.
- 12. Hearing protection and hazards.** Always wear hearing protection as noise generated from Grinder and workpiece vibration can cause permanent hearing loss over time.
- 13. Eye protection.** Always wear safety glasses when using this machine. Small particles become airborne at high speed and can cause serious eye injury. Use Grinding shields on machine at all times.
- 14. Top & Side Grinding.** Grinding on the top of the wheel can cause kickback. Always grind on the downward part of the wheel. Grinding on the side of the wheel can cause them to break and fly apart unless it is rated for side grinding.
- 15. Tool rest position.** Set the tool rest within 3mm from the wheel to avoid the workpiece being pulled in causing loss of control and hand being pulled into grinding wheel.
- 16. Starting position/speed.** Never turn the Grinder on when the workpiece is resting on the grinding wheel. Allow wheel to reach full speed before grinding.
- 17. Guards.** Do not operate Grinder without the correct guards in place.
- 18. Stopping the grinding wheel.** Do not stop or slow the wheel with your hand or workpiece. Allow the machine to stop on its own.
- 19. Dust hazard.** Grinding causes hazardous dust, which may cause long term respiratory problems if inhaled. Always wear an approved respirator when grinding.
- 20. 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**

### **Grinder**

Developed in Co-operation Between A.W.I.S.A and Australia Chamber of Manufactures  
This program is based upon the Safe Work Australia, Code of Practice - Managing Risks of Plant in the Workplace ( WHSA 2011 No10 )

| Item No.  | Hazard Identification         | Hazard Assessment | Risk Control Strategies<br><small>(Recommended for Purchase / Buyer / User)</small>   |
|---|-------------------------------|-------------------|---|
| A   | ENTANGLEMENT                  | HIGH              | Eliminate, avoid loose clothing / Long hair etc.  |
| B   | CRUSHING                      | LOW               | Secure & support work material when grinding.   |
| C   | CUTTING, STABBING, PUNCTURING | MEDIUM            | Isolate power to machine prior to any checks or maintenance being carried out.<br>Do not adjust or clean machine until the machine has fully stopped.<br>Ensure tool rests are adjusted and maintained with a maximum 3mm gap between tool rest and grinding wheel.                   |
| D   | SHEARING                      | MEDIUM            | Make sure all guards are secured shut when machine is on.<br>Isolate power to machine prior to any checks or maintenance.   |
| E   | FRICTION                      | MEDIUM            | Keep hands and body away from grinding wheel.   |
| F   | STRIKING                      | MEDIUM            | Ensure grinding wheels are tightly secured on spindle.<br>Wear safety glasses.<br>Stand clear of moving parts on machine.<br>Check grinding wheels for damage before use.<br>Remove all loose objects around moving parts.<br>Ensure eyeshields are clean and appropriately adjusted. |
| 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 sparks and workpiece.<br>Wear hearing protection as required.   |
| Plant Safety Program to be read in conjunction with manufactures instructions |                               |                   |   |



Authorised and signed by:

Safety officer:

Manager:

[www.machineryhouse.com.au](http://www.machineryhouse.com.au)

[www.machineryhouse.co.nz](http://www.machineryhouse.co.nz)

Revised Date: 18th June 2014



#### ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely un-serviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

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