

# INSTRUCTION MANUAL

## BG-8 Industrial Bench Grinder (415V) 200mm Fine/Coarse Wheels



G161A

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## [ SAFETY RULES FOR ALL POWER TOOLS ]

1. Read and become familiar with the entire instruction manual. Learn the tool's applications, limitations and possible hazards.
2. Earth all tools. If the tool is equipped with a three-prong plug, it must be plugged into a three-contact electric outlet. The third prong is a ground to provide protection against accidental electrical shock. If an adapter is used to accommodate a two-contact outlet, the adaptor's grounding lug must be connected to a known ground. Never remove the third prong on a three-prong plug.
3. Check damaged parts. A guard or any other part that is damaged should be checked to ensure that it will operate properly and perform its intended function before the tool is used further. Check for proper alignment of moving parts and for possible broken parts, loose mountings, or any other condition that could affect the tool's operation. A guard or other damaged part should be properly repaired or replaced.
4. Disconnect power before servicing and when changing accessories such as blades, cutters.
5. Keep guards in place and in working order.
6. Protect your eyes from being injured by objects thrown by a power tool. Always wear safety glasses or safety goggles.
7. Wear a face mask or dust mask if the cutting operation produces dust.
8. Don't force the tool. It will give a better and safer performance when used on jobs for which it was designed.
9. Avoid accidental starting. Ensure that the power switch is in the OFF position before plugging in the power cord. Remove the switch when the tool is not being used.
10. Remove adjusting keys and wrenches. Ensure that keys and adjusting wrenches are removed from the tool before turning it on.
11. drugs, alcohol, and medication. Do not operate tool if you are under the influence of drugs, alcohol, or medication that could effect your ability to use the tool properly.
12. Use recommended accessories. Using improper accessories can be hazardous. If in doubt, check the instruction manual.
13. Never stand on a tool. Falls can result in injury.
14. Never leave a tool running unattended. Turn the power switch OFF. Don't leave the tool until it has come to a complete stop.
15. Always remove the power cord plug from the electric outlet when making adjustments, changing parts, cleaning, or working on the tool.
16. Avoid dangerous conditions. Don't use power tools in wet or damp areas or expose them to rain. Keep your work area clean and well lighted. Do not use power tools in areas where fumes from paint, solvents, or flammable liquids pose a potential hazard.
17. Keep visitors and children away. Other people should keep a safe distance from the work area, especially when the tool is operating.
18. Use the proper tool. Don't force a tool to do a job for which it was not designed.
19. Keep tools in top condition. Keep them clean and sharp for the best and safest performance. Follow the instructions for changing accessories and lubricating.
20. Secure all work. When practical use clamps or a vise to hold work. It is safer than using your hands and prevents round or odd-shaped pieces from turning.
21. Don't overreach. Keep proper footing and balance at all times. Wear oil-resistant rubber-soled footwear. Keep the floor clear of oil, scrap wood, and other debris.
22. Wear proper clothing and, if necessary, protective hair covering. Loose clothing or jewelry can get caught in moving parts.
23. Make the workshop childproof with padlocks, master switches, or by removing starter keys.

## Bench Grinder Note

### DEAR CUSTOMER

Thank you for purchasing a Hafco bench grinder.

If looked after correctly, this machine will give you years of reliable service life.

On initial start up you may find some vibration. This is normal and can be reduced by the Dressing of the wheel to bring it into concentricity and balance.

This will also have to be done through the life of the wheel to get optimum results out of the wheels fitted.

The wheels can be dressed with a

Star Dresser,

a diamond tip dresser

or a silicon carbide or boron Dressing stick



(Available from most Engineering abrasive suppliers)

Thank you

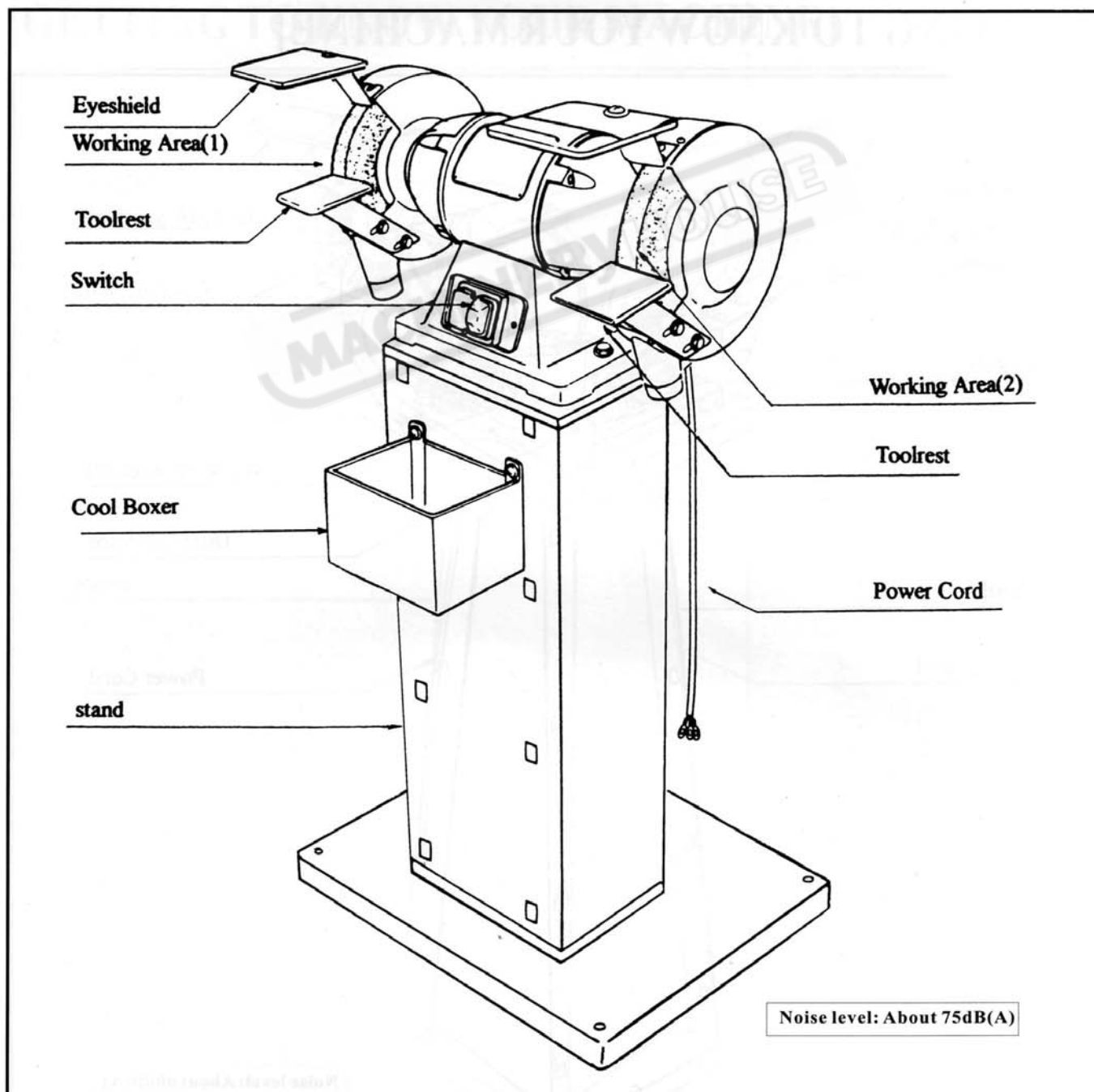
## [TECHNICAL DATA]

Model	GR831/833	GR1031/1033	GR1031/1033-4P
Grinding Wheel (mm)	200x25x20	250x38x25.4 (RESINOUS)	250x38x25.4
Motor (output kW)	0.30	0.75	0.56
Speed (50hz / rpm)	2850		1420
Dimension (mm)	470x210x275	580x265x350	
Net Weight (kgs)	19.5	47	43

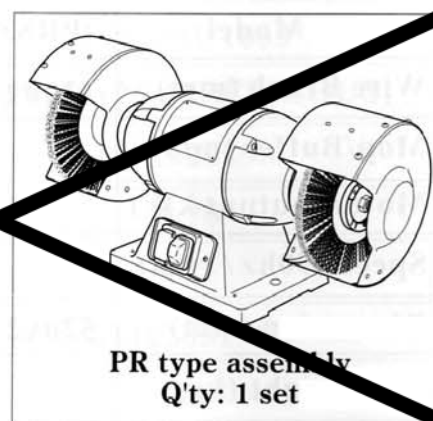
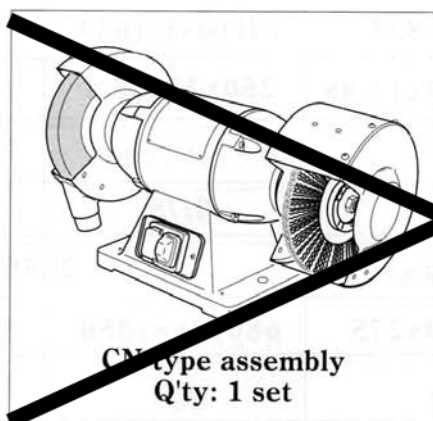
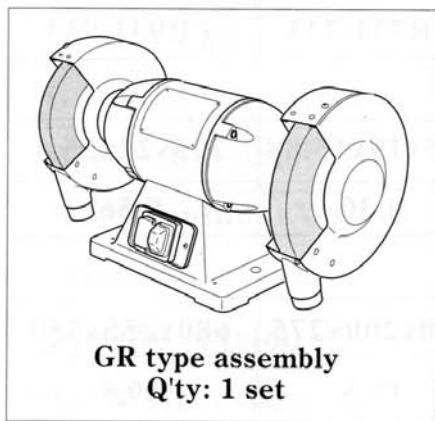
\* Dimensional width not includes toolrest.

\* Above data is manufacturer's standard specification. It can be produced by customers' special request.

## [GETTING TO KNOW YOUR MACHINE]

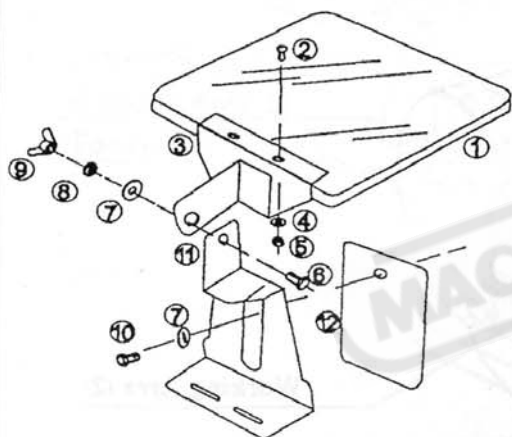


# [ UNPACKING AND CHECKING LIST ]



## Bag 1 : Eyeshield

- GR : 2 sets GR type
- CN : 1 set GR type and 1 set PR type
- PR : 2 sets PR type

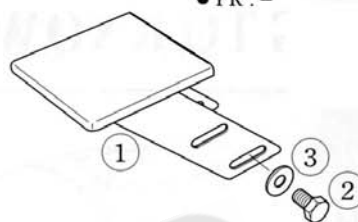


Parts ⑦ ⑩ & ⑫ for GR type only

Ref.No .	Parts Name	Q'ty	
		GR	PR
1	Eye Shield	1	1
2	Screw	1	1
3	Support Plate	1	1
4	Washer	2	2
5	Hex. Nut	2	2
6	Hex. Bolt	1	1
7	Washer	2	1
8	Spring Washer	1	1
9	Wing Nut	1	1
10	Screw	1	-
11	Bracket	1	1
12	Spark Arrestor	1	-

## Bag 2 : Toolrest

- GR : 2 sets
- CN : 1 set
- PR : -



Ref N o.	Parts Name	Q'ty
1	Toolrest	1
2	Hex Bolt	4
3	Washer	4

## Bag 3 : Dust Collector

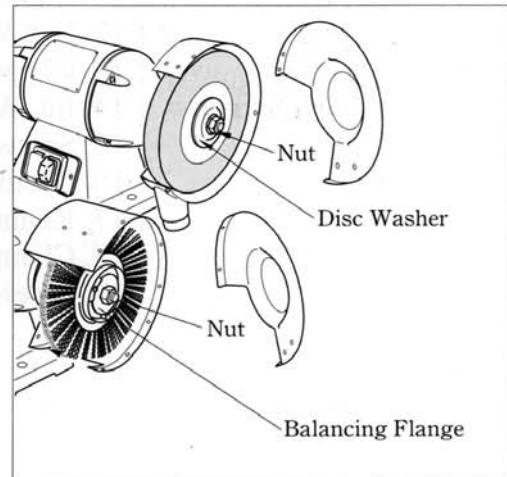
- GR : -
- CN : 1 set
- PR : 2 sets



Ref N o.	Parts Name	Q'ty
1	Dust Collector	1
2	Hex Bolt	4
3	Washer	4
4	Chip Outlet	1
5	Screw	4
6	Spring Washer	4

## [ REPLACEMENT OF WHEEL ]

1. Remove toolrest and eyeshield or dust collector unit from wheel cover by taking off bolts and screws.
2. Take off screws to allow removing wheel cover as figure.
3. Remove nut, disc washer or balancing flange and waste wheel.
4. Put new wheel and every parts back in reverse order. It's important to make a good adjustment of balancing before assembling wheel covers. This message could be learned
5. For your safety, check all screws and bolts. Make sure they are all well fixed before switch on.
6. The distance between wheel, spark arrestor and toolrest table should be always remained at about **2-3mm to get the better spark arresting effect and good grinding performance.**
7. When this distance was changed due to the wearing of wheel, you need to do adjustment.



### Safety advice on the mounting of new grinding wheels

1. Before mounting the wheel, brush it clean and examine it for damage. The soundness of a new wheel can be further checked by suspending it vertically and tapping it with a light non-metallic implement; it should ring. Do not use it if it sounds dead (cracked).
2. Flange size is normally not smaller than 1/3 to of wheel diameter.
3. Do not force the wheel onto the machine or alter the centre hole diameter of the wheel.
4. Tighten the nut on the flanges only sufficiently to ensure that they drive the wheel. Hand pressure

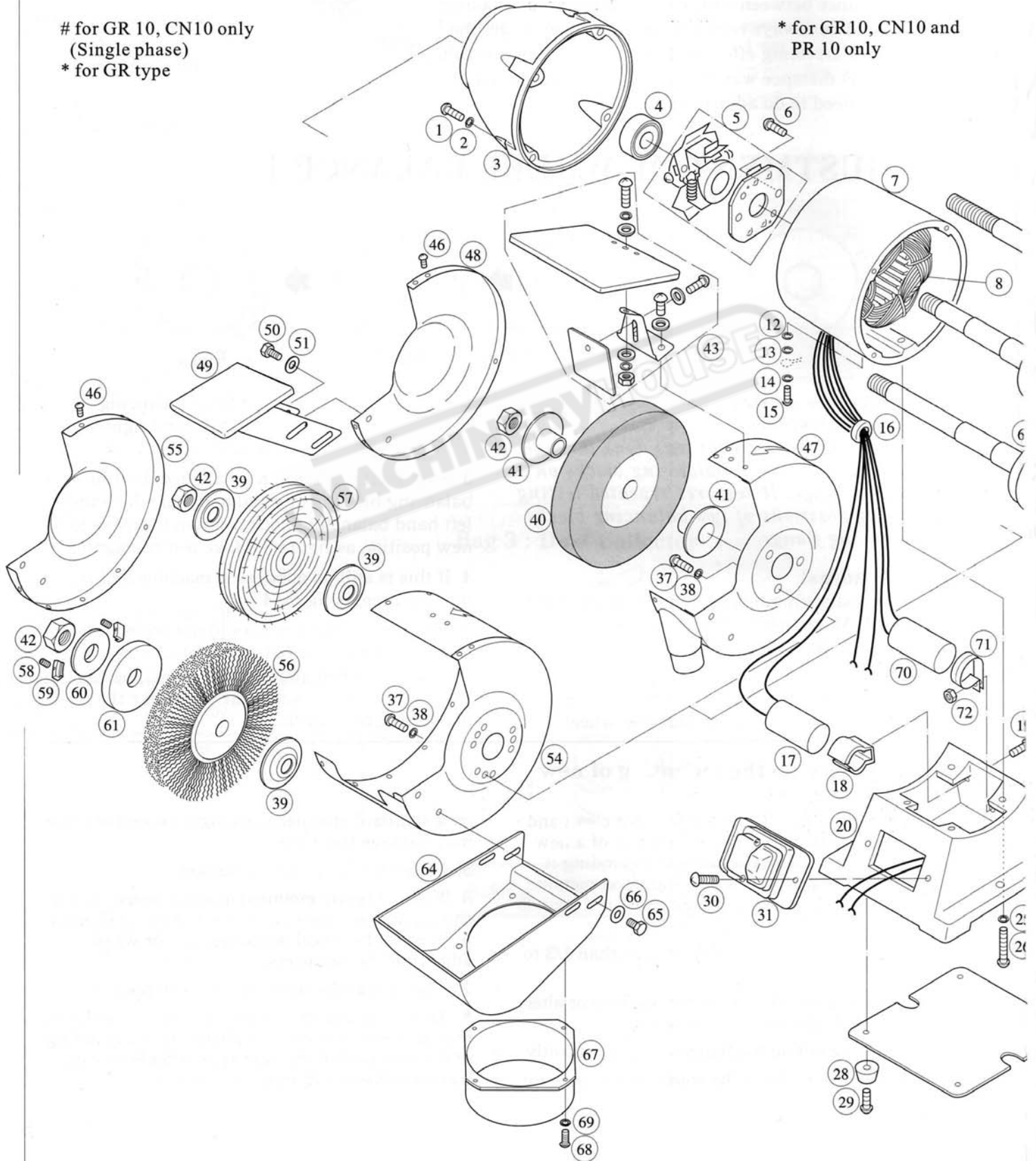
on a standard spanner is enough; excessive force may damage the wheel.

5. Adjust the balancers of flanges.
6. Wheel of newly mounted must be tested on free run for at least one minute. Do not stand directly in front of the wheel while test run or when adjusting the balancers.
7. Ensure that the wheel guard is in position.
8. After finishing the mounting of new wheel, you may proceed to work, but please do not grinding at the side part of straight type wheels or with incompatible workpiece.

- |                         |                       |                    |                         |
|-------------------------|-----------------------|--------------------|-------------------------|
| 1. Screw                | 10. Fan               | 20. Grinding Base  | 30. Screw               |
| 2. Spring Washer        | 11. Right Support     | 21. Screw          | 31. NVR                 |
| 3. Left Support         | 12. Ext. Washer       | 22. Cable Strainer | 32. Overload Protector* |
| 4. Ball Bearing         | 13. Copper Set        | 23. Fixing Plate   | 34. Spring Washer*      |
| 5. Centrifugal Switch # | 14. Int. Washer       | 24. Power Cord     | 35. Hex. Nut*           |
| 6. Screw                | 15. Screw             | 25. Washer         | 36. Screw               |
| 7. Stator Housing       | 16. Grommet Rubber    | 26. Screw          | 37. Screw               |
| 8. Stator               | 17. Running Capacitor | 27. Base Plate     | 38. Spring Washer       |
| 9. Rotor Shaft*         | 18. Clamp             | 28. Pad            | 39. Disc Washer         |
|                         | 19. Screw             | 29. Screw          |                         |

# for GR 10, CN10 only  
(Single phase)  
\* for GR type

\* for GR10, CN10 and  
PR 10 only

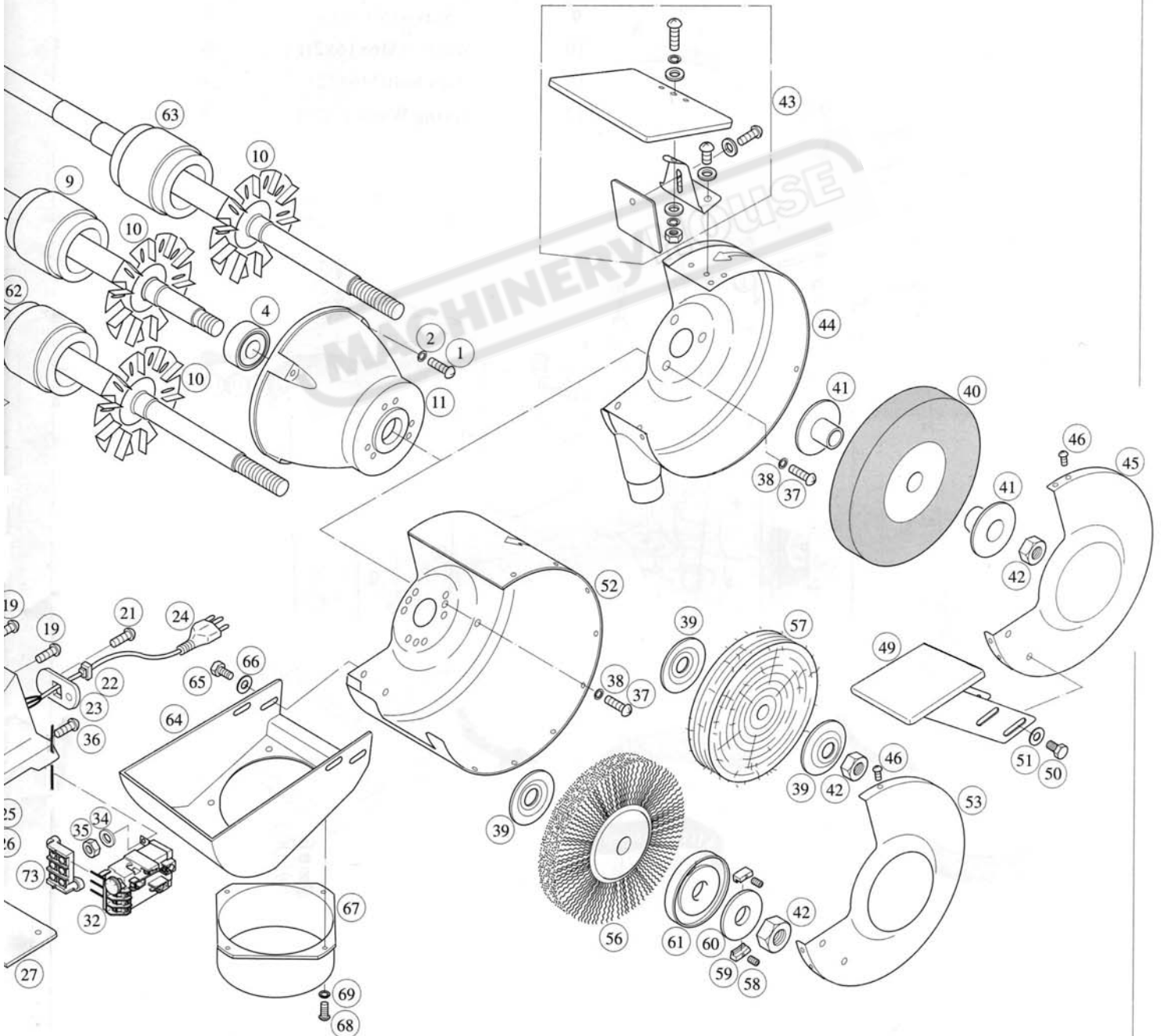


- |                         |                         |                      |                          |
|-------------------------|-------------------------|----------------------|--------------------------|
| 40. Grinding Wheel      | 50. Hex. Bolt           | 60. Washer           | 70. Starting Capacitor * |
| 41. Sleeve              | 51. Washer              | 61. Balancing Flange | 71. Clamp *              |
| 42. Hex. Nut            | 52. Right Int. Cover B  | 62. Rotor Shaft*1    | 72. Hex. Nut *           |
| 43. Eyeshield Set       | 53. Right Wheel Cover B | 63. Rotor Shaft*2    | 73. Wiring Board         |
| 44. Right Int. Cover A  | 54. Left Int. Cover B   | 64. Dust Collector   |                          |
| 45. Right Wheel Cover A | 55. Left Wheel Cover B  | 65. Hex. Bolt        |                          |
| 46. Screw               | 56. Wire Brush          | 66. Washer           |                          |
| 47. Left Int. Cover A   | 57. MOP/Buffer          | 67. Chip Outlet      |                          |
| 48. Left Wheel Cover A  | 58. Set Screw           | 68. Screw            |                          |
| 49. Toolrest            | 59. Balance Block       | 69. Spring Washer    |                          |

44+45+47+48 for GR type  
 47+48+52+53 for CN type  
 52+53+54+55 for PR type

\*1 for CN type  
 \*2 for PR type

\*for GR 10, CN10 only  
 (Single phase)





## [ IMPORTANCE NOTICE FOR CE ]

### Handling of Machine

- If the net weight of machine exceeds 40 kgs, it is better to handle and transport with the help of lifting tools.
- The total weight of machine must be ensured before handling.

### Environment Requirements for Installation

- Be sure to provide sufficient light for operation according to the codes or regulations published for local area.
- You do not get the information about lighting, a lighting intensity of 300 lux is the least value to be supplied.

### Electrical Connection/Disconnection & Operation

#### • For Three Phase

##### 1. Electrical Connection:

- \_ A cable with four wires is equipped to connect your machine into the 3 phase power supply.  
**Please connect your machine into the power supply with hand-operated disconnection device**, which is in compliance with subclause 5.3 of EN60204-1, such as no fuse breaker or plug/socket combination.
- \_ For the protection of control device, we recommend the operator to supply **a fuse with 6 amp. current rating of fuse**, and the total length between fuse and connection terminal shall not exceed 1.5m.
- \_ **The exact power source voltage, frequency, and number of phase** shall be checked according to the installation diagram and circuit diagram.
- \_ **The correct direction of grinder should be checked after connection.**

##### 2. Electrical Disconnection:

- \_ The disconnection is carried out by hand-operated disconnecting device or plug/socket combination.
- \_ Be sure to disconnect this machine from power source, when you want to stop the job, maintenance and adjustment.

##### 3. Grounding:

The grounding of the grinder is carried out **by connecting the yellow/green terminal of supply cable** to the grounding terminal of power source. Be sure to ground your machine before connecting machine to power source in any situation

#### • For Single Phase

1. The connection, disconnection and grounding is carried out **through the plug**, equipped on the grinder. For the safety reason, **do not change this plug into any other type in any situation.**
2. for the protection of control device, we recommend the operator to supply **a fuse with 6Amp. (GR/CN 10, PR9/10 with 10Amp.) current rating of fuse**, and the total length between fuse and connection terminal shall not exceed 1.5m.
3. **The exact power source voltage, frequency, and number of phase** shall be checked according to the installation diagram and circuit diagram.

**WARNING** Do not disconnect grounding terminal before disconnecting power source.

### Operation

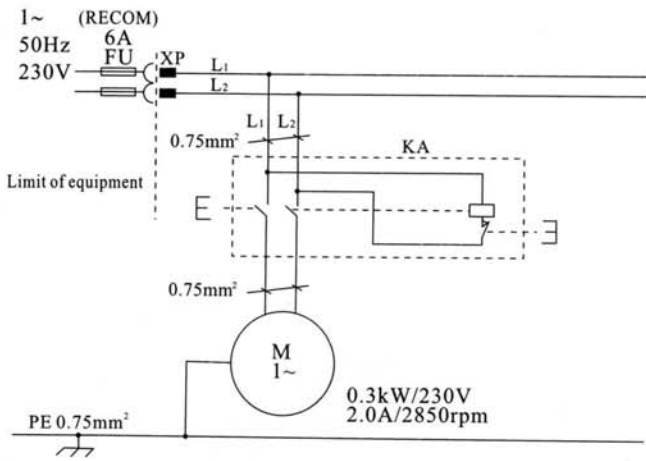
- "START" ... Push the switch marked with " I ".
- "STOP" ... Push the switch marked with " O ".

### Maintenance: Overload protection for GR/CN/PR 10

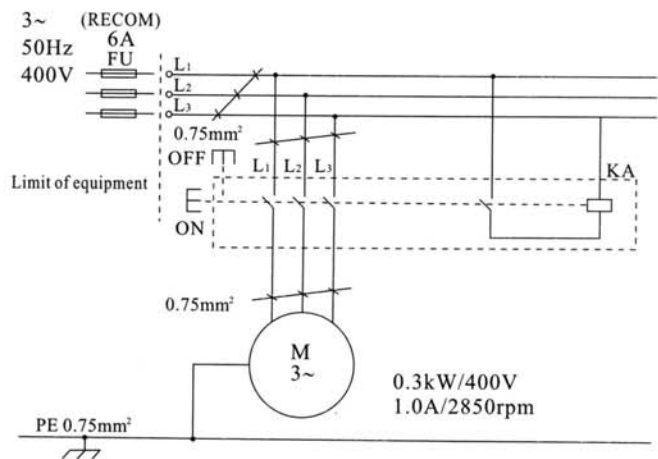
- For three phase, it is an automatic recovery type. The motor is liable to be restarted if overload relay is cooled down automatically.
- For single phase, please reset the relay as the following steps:
  1. Lay down the machine and remove the bottom plate so as to access to the relay.
  2. Push the reset button and restore the bottom plate.
  3. Wait some minutes for cooling down, the motor is liable to be started.

# [ Electrical Circuit Diagram & Components Parts List ]

## • GR/CN 831, PR731

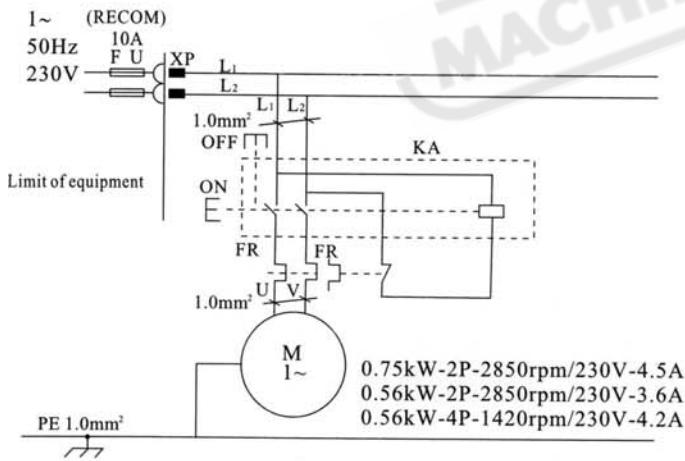


## • GR/CN 833, PR733

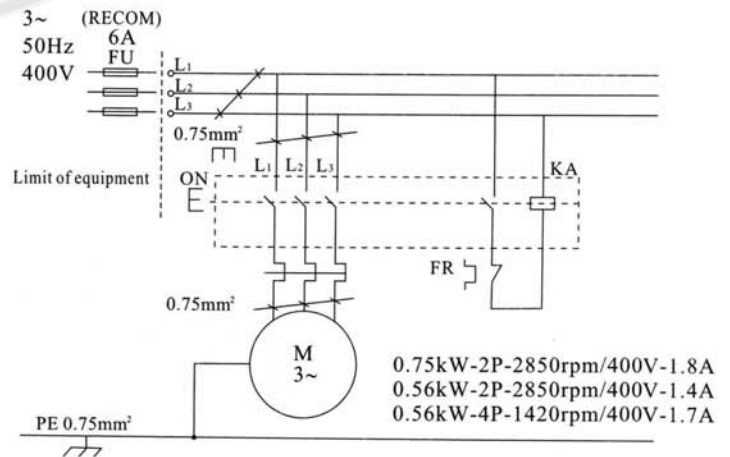


Item Designation	Description & Function	Technical Data	Remark
KA	Magnetic Contactor	230Vac, 10A (single phase) 400Vac, 10A (three phase)	CE, KJD12 CE, JD2
XP	Plug for Supply	250V, 16A (single phase)	CEBEC (D) (FI) (N) (S) (A) KEMA (Gve)
	Cable	H05-VVF 3x0.75mm <sup>2</sup> (single phase) VCTF 4x0.75mm <sup>2</sup> (three phase)	(A) (S) KEMA VDE0620

## • GR/CN 1031, PR931



## • GR/CN 1033, PR933



Item Designation	Description & Function	Technical Data	Remark
KA	Magnetic Contactor	230Vac, 10A (single phase) 400Vac, 10A (three phase)	CE, KJD12 CE, JD2
FR	Overload Protector	$\frac{4-6}{2.8-4.2/3.5}$ (1 phase)	CE, BTH
FR	Overload Protector	1.4-2.2/1.8 (3 phase)	CE, BTH
KP	Plug for Supply	250V, 16A (single phase)	CEBEC (D) (FI) (N) (S) (A) KEMA (Gve)
	Cable	H05-VVF 3x1.0mm <sup>2</sup> (single phase) VCTF 4x0.75mm <sup>2</sup> (three phase)	VDE

# 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 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 work material when grinding.
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. Ensure toolrests are adjusted close to grinding wheel.
D	SHEARING	MEDIUM	Make sure all guards are secured shut when machine is on.
E	FRICION	MEDIUM	Isolate power to machine prior to any checks or maintenance.
F	STRIKING	MEDIUM	Keep hands and body away from grinding wheel. Ensure grinding wheels are tightly secured on spindle. Wear safety glasses. Stand clear of moving parts on machine. Check grinding wheels for damage before use. Remove all loose objects around moving parts. Ensure eyesheilds 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. Wear hearing protection as required.
Plant Safety Program to be read in conjunction with manufactures instructions			



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

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

Revised Date: Aug-08

# **WARNING**

## **Grinder Safety Instructions**

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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 machine's 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.



# 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.