

# INSTRUCTION MANUAL

## NSW Schools / TAFE - BG-10 Heavy Duty Pedestal Grinder (415V) 250mm



K8221

# **HARE & FORBES**

## **MACHINERYHOUSE**

Established 1930

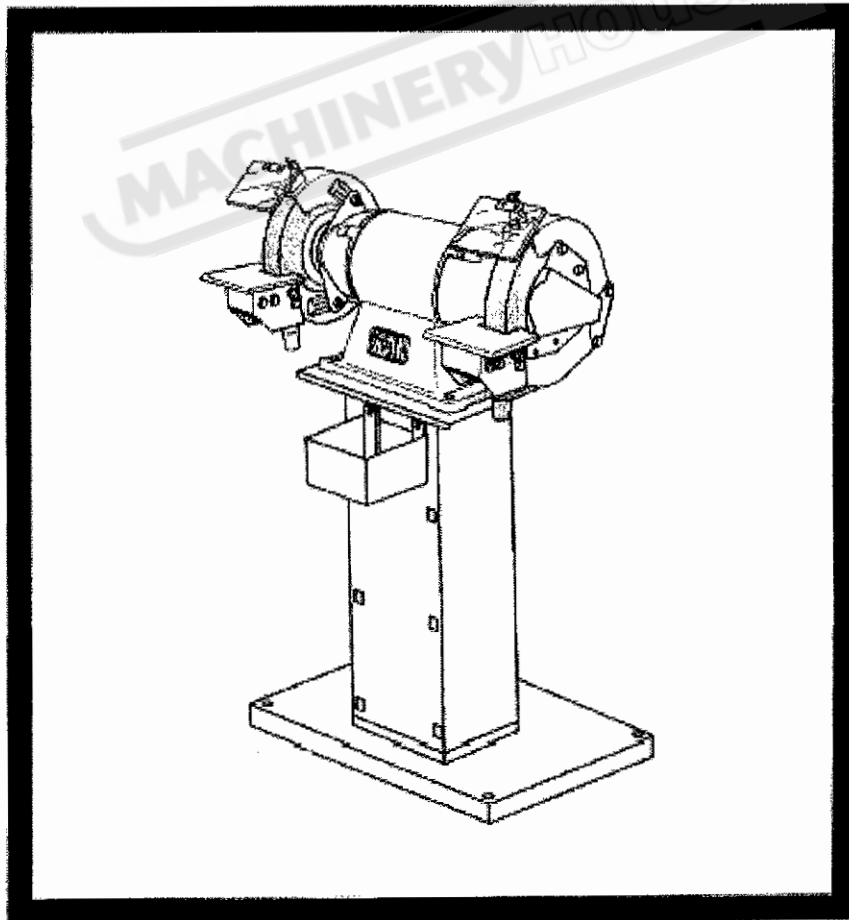
Distributors of new & used workshop Equipment

### G162 7/11/02 10 GRINDER

# **GRINDER**

## **HIGH POWER MACHINE**

Instruction Manual



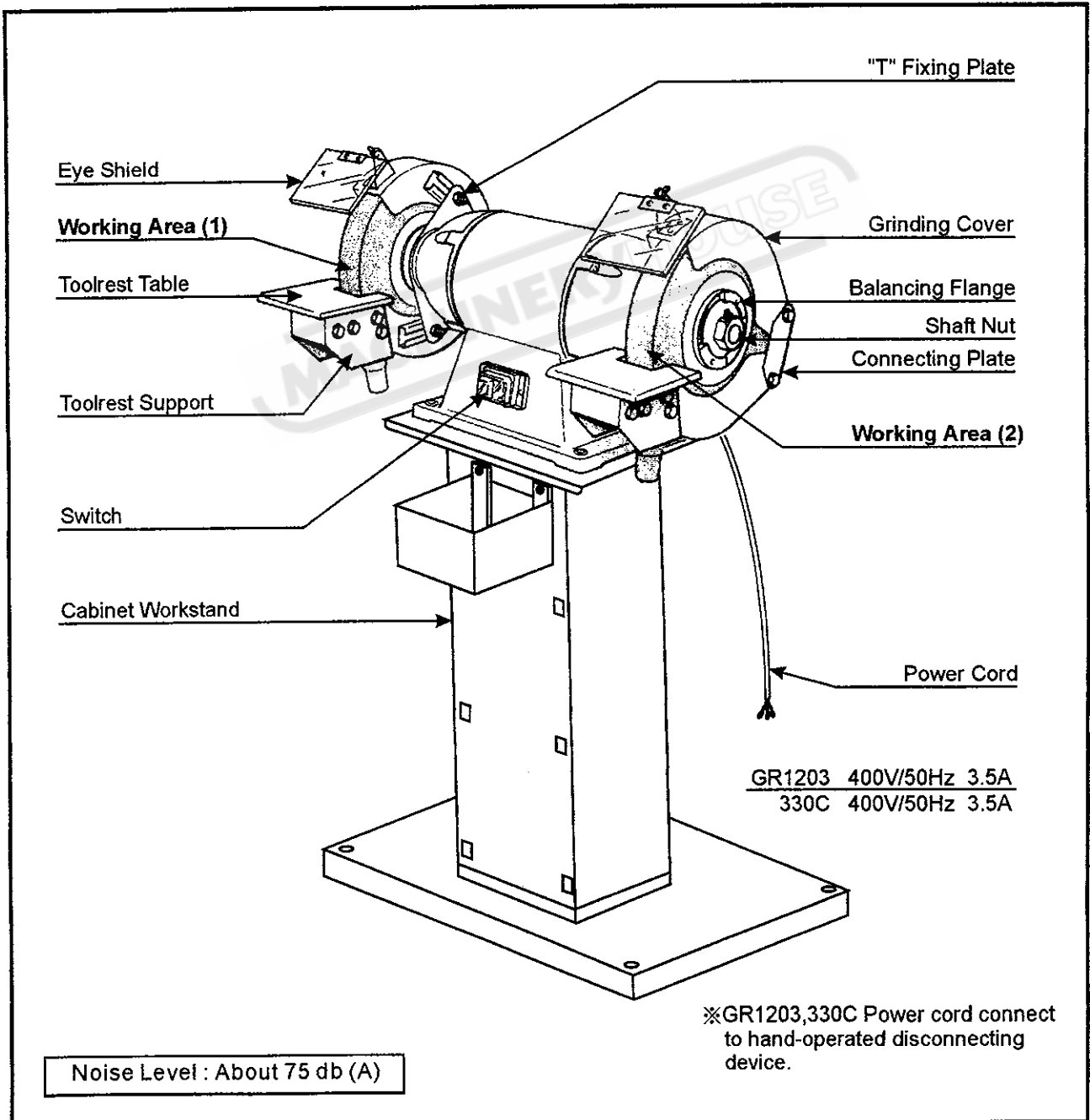
# About Your Machine

## Technical Data

| MODEL          | GR1203              | 330C           |
|----------------|---------------------|----------------|
| GRINDING WHEEL | 300×50×25.4mm       | 300×50×25.4mm  |
| MOTOR          | 1.5kW (OUTPUT)      | 1.83kW (INPUT) |
| SPEED/RPM      | 50Hz/1420.60Hz/1720 | 50Hz/1420      |
| WEIGHT (NW/GW) | 80/103kgs           | 80/103kgs      |
| HEIGHT W/STAND | 1180mm              | 1180mm         |
| STAND (L×W×H)  | 380×420×750mm       | 380×420×750mm  |

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

## Getting to know your machine



# Unpacking And Checking List

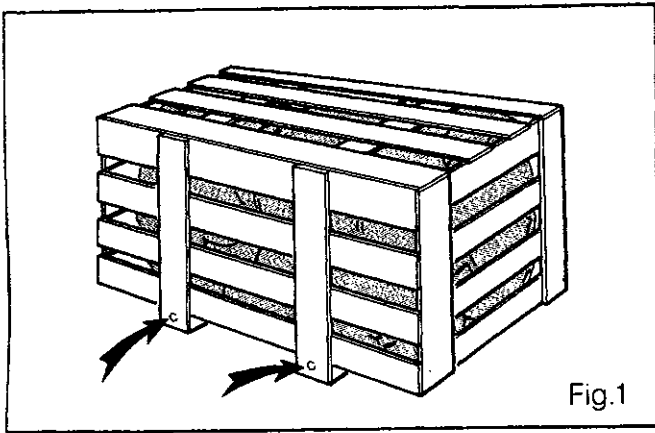


Fig.1

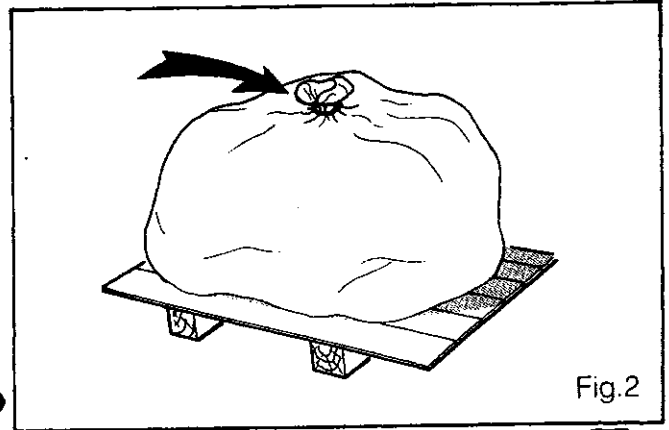


Fig.2

## Unpacking

- 1 Check wooden crate, make sure it's in good condition before unpacking. Contact nearest dealer if packing crate was seriously damaged.
- 2 Remove crate cover.
- 3 Loosen packing bag, machine would show up.
- 4 Machine base was fixed to wooden pallet. Loosen these 4 fixing bolts as figure 3 before it can be moved.

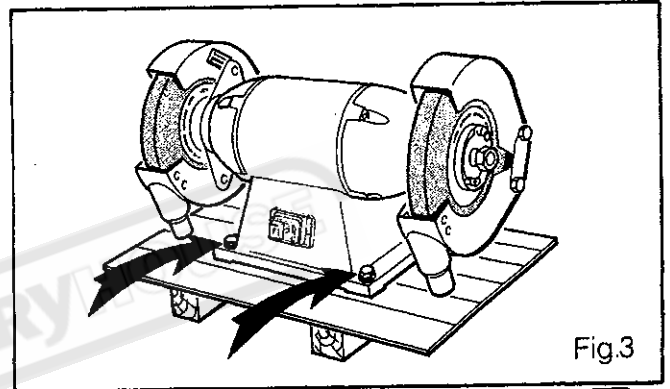


Fig.3

## Checking list of loose parts

| Ref. No. | Description                  | Q'ty. |
|----------|------------------------------|-------|
| 1        | Toolrest tables (left/right) | 2     |
| 2        | Toolrest supports            | 2     |
| 3        | Washers, M10×20×2            | 16    |
| 4        | Hex. bolts, M10×12 $\phi$    | 16    |
| 5        | Hex. wrench 3mm              | 1     |

• These parts are shown in figure 4.

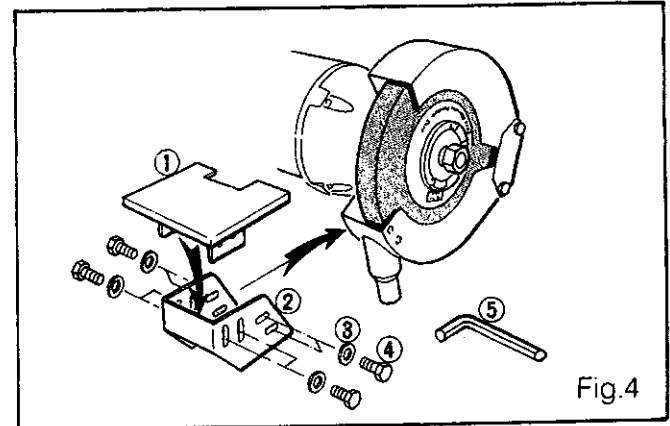


Fig.4

## Toolrests assembly

- 5 Combine toolrest tables and supports. Donot tighten fixing bolts.
- 6 Connect these assembly unit to grinding cover, as figure 5.
- 7 Put toolrest tables in correct position, keep about 5 mm distance from grinding wheels.
- 8 Make sure all bolts are firmly tightened

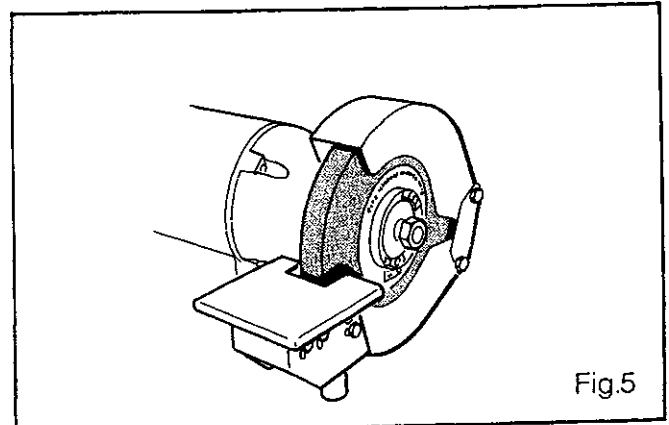


Fig.5

# Adjustment of Wheel Covers

- 1 New wheels diameter is 305 mm (12"). The distance between wheels and toolrest tables should be always remained at about 5 mm to get the best grinding performance. When this distance was changed due to the wearing of wheels, you need to do adjustment.

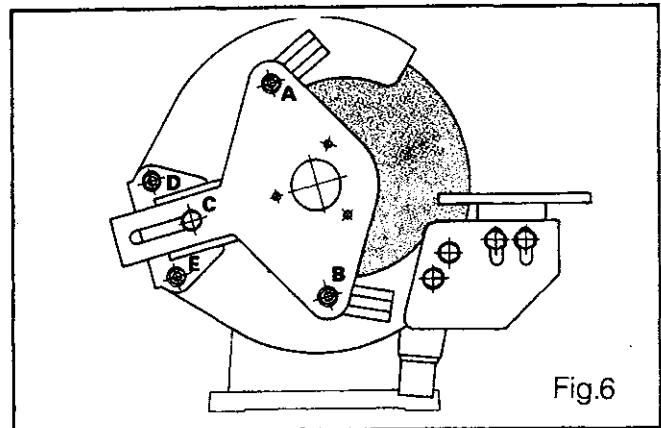


Fig.6

- 2 Loosen slightly bolts No. A / B / C / D / E indicated in figure 6. Use the bar of wooden hammer to knock the connecting plate of wheel covers as figure 7. Make sure the toolrest table was hold by another hand so as it cannot damage wheel.
- 3 Stop when the distance is about 10 mm. Fasten bolts no. A / B / C / D / E.

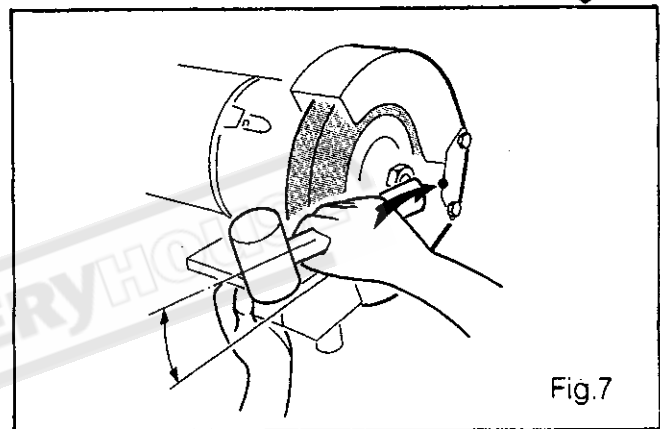


Fig.7

- 4 Adjust toolrest tables to the correct position, 5 mm distance to wheels.
- 5 Check and make sure all bolts are firmly tightened.
- Figure 8 shows the maximum adjustment of wheel covers, the minimum size of grinding wheels.

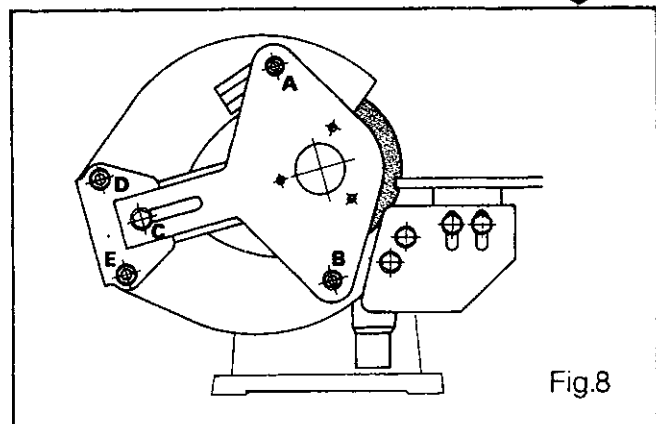


Fig.8

# Replacement of Grinding Wheels

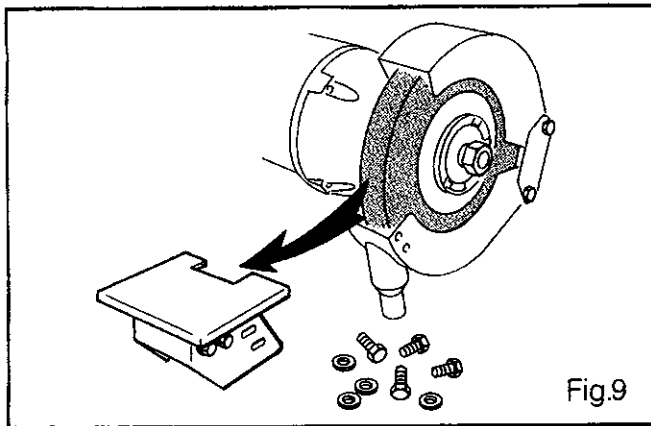


Fig.9

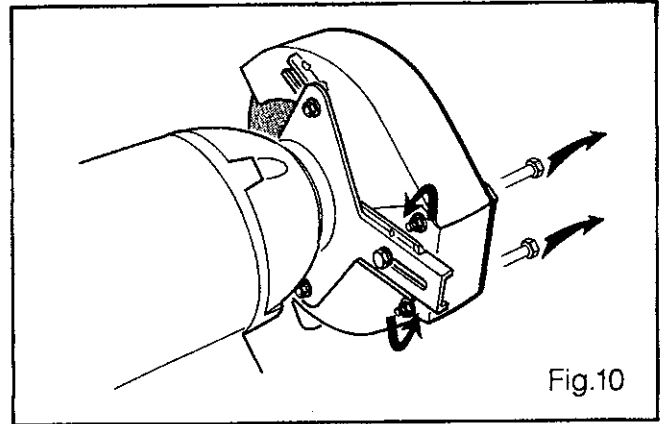


Fig.10

- 1 Remove toolrest table / support unit from wheel cover as figure 9. It's 4 fixing bolts for one unit.
- 2 Take off 2 long bolts of the cover's connecting plate as figure 10.
- 3 Loosen 2 screws of "T"-fixing plate to allow removing wheel covers as figure 11.

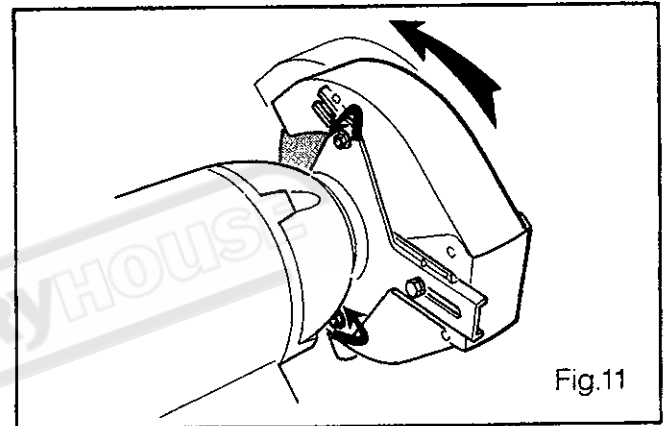


Fig.11

- 4 Take off bolts to slip off connecting plate as figure 12.

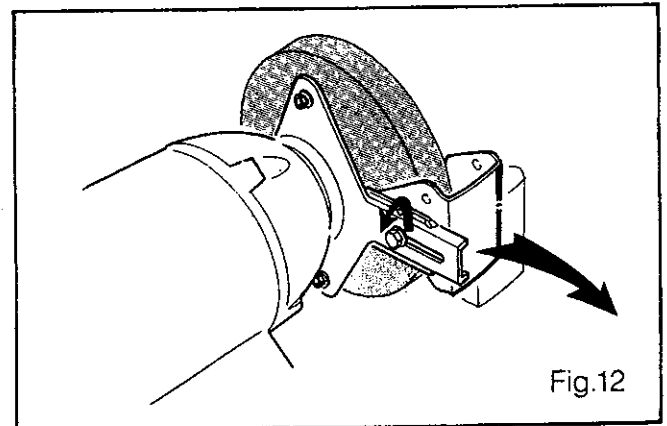


Fig.12

- 5 Remove nut, balancing flange and wheel.
- 6 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 in next page.

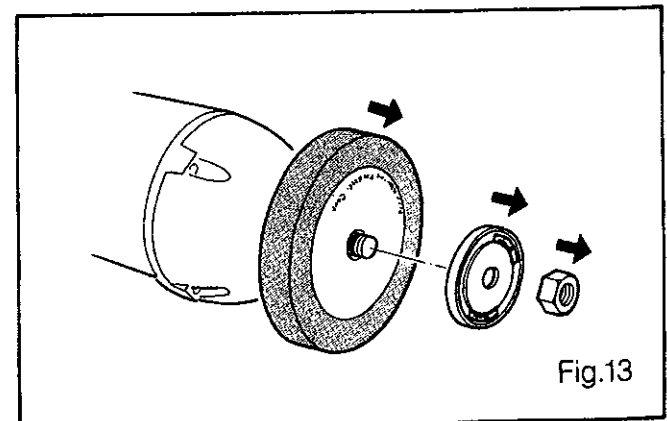


Fig.13

**NOTE** For your safety, check all screws and bolts. Make sure they are all well fixed before switch on.

# Replacement of Grinding Wheels

## Take off wheel

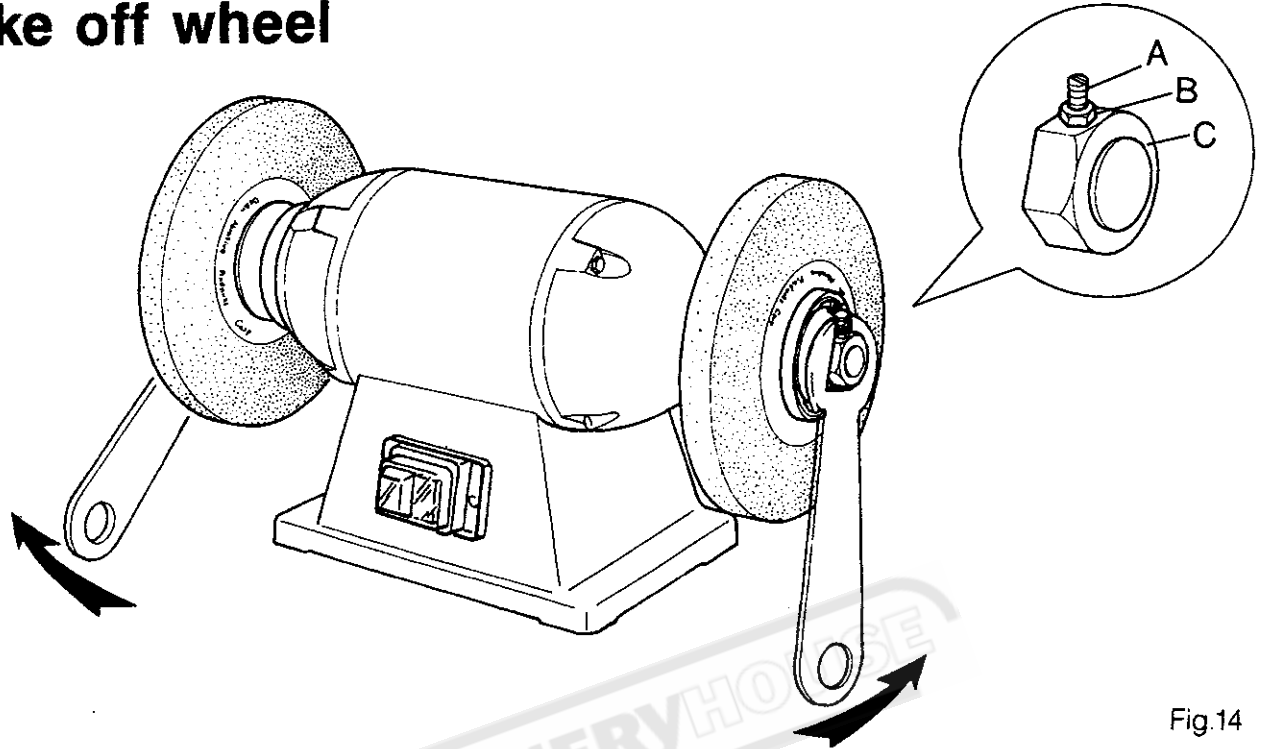


Fig.14

Release hex. Nut "B" (M6), then loosen screw "A" (M6), as figure No. 14 use wrench as stop in one end of wheel, use another wrench to remove nut "C" (1" – 8UNC), balancing flange and grinding

wheel in order.  
 Note: Don't take off the screw (M6) so as the inside copper stays in position.  
 (Supplement of page 4 fig. 13)

## Install wheel

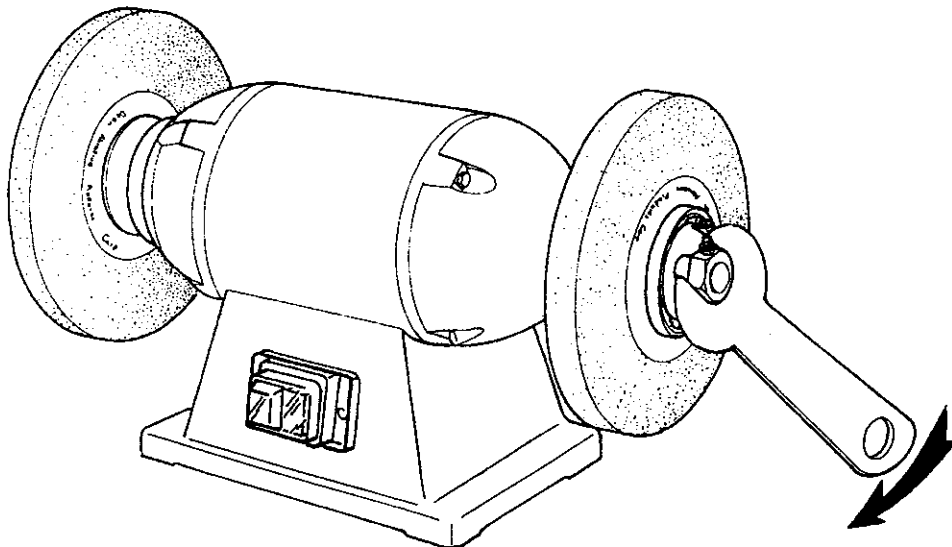
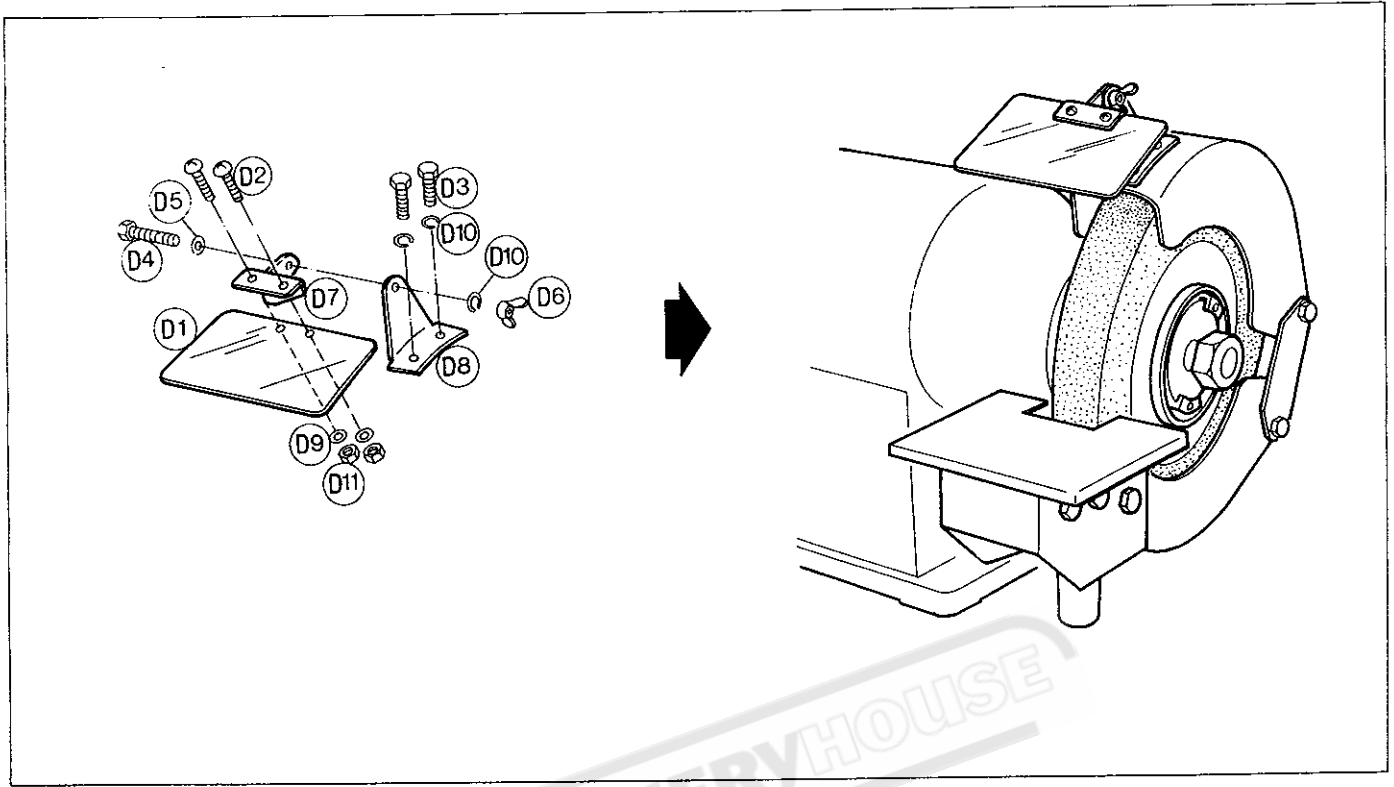


Fig.15

Reverse above procedure and fasten the hex. Nut "C" (1" – 8UNC) to secure wheel. Then, make

quick hammering to lock wheel completely, as Figure No. 15.

# Assembly of Eyeshield



## Parts list of eyeshield

| Ref. No. | Description             | Q'ty. |
|----------|-------------------------|-------|
| D1       | Eye Shield              | 2     |
| D2       | Screw 3/16 24NC×7/16"   | 4     |
| D3       | Hex. Bolt M6×1P×8       | 4     |
| D4       | Hex. Bolt 1/4 20NC×1/2" | 2     |
| D5       | Washer φ6.4×φ18×2       | 2     |
| D6       | Wing Nut 1/4-20NC       | 2     |
| D7       | Right Support Plate     | 1     |
| D8       | Bracket                 | 2     |
| D9       | Washer φ5.3×φ12.4×0.8   | 4     |
| D10      | Spring Washer 1/4       | 6     |
| D11      | Hex. Nut 3/16-24NC      | 4     |
| D12      | Left Support Plate      | 1     |

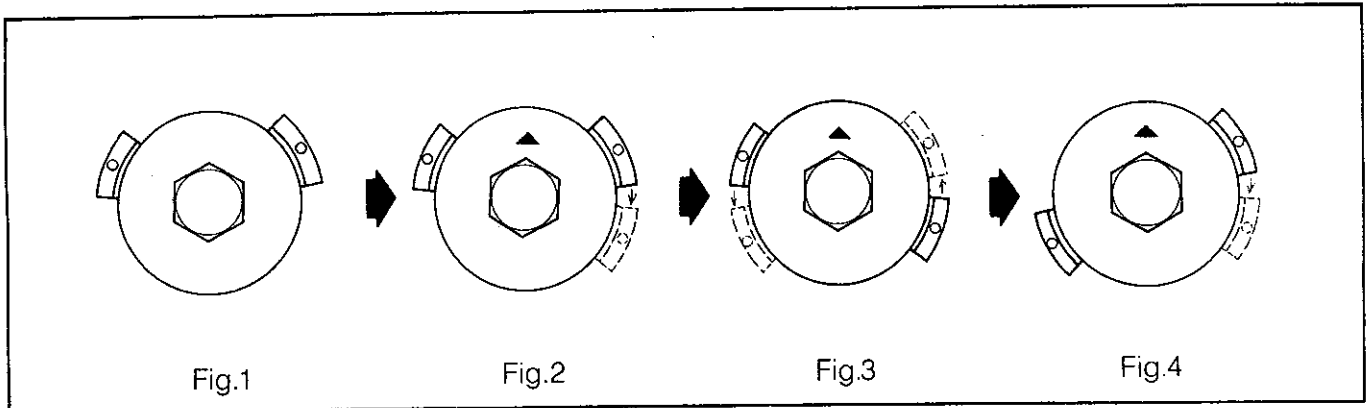


# Adjustment of Wheels Balance

This job can be started when shaft nut of wheels were tightened.

The balancing adjustment was done through one particular parts of balancing blocks on

balancing flange. It requires repeated testing by moving positions of two balancing blocks on balancing flange.



## How to adjust

- 1 Put two balancing blocks in position showed in figure No. 1. Make first test run and check the balancing result.
- 2 Switch off if the balancing was no good. Start our first adjustment. Turn wheel to the original position as figure No. 1 by hand. Mark on wheel as figure No. 2. Move the right hand balancing block clockwise to new position, and tighten it. Make the second test run and check again.
- 3 Switch off if it's still not satisfied. Return balancing block to original position. Move the left hand balancing block counterclockwise to new position as figure No. 3. Make test run again.
- 4 If this is still no good, stop machine and try new position as figure No. 4.
- 5 Please note that you should not adjust the much movement for balancing blocks in every step of mentioned above, and you will be easy to understand its characteristic and make the machine to be your hand.

## Safety advice on the mounting of new grinding wheels

- 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).
- Flange size is normally not smaller than 1/3 to wheel diameter.
- Do not force the wheel onto the machine or alter the centre hole diameter of the wheel.
- 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.
- Adjust the Balancers of flanges.
- 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.
- Ensure that the wheel guard is in position.
- 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.

# Importance Notice For CE

## Handling of Grinder

1. The net weight of this machine is about 97kgs including stand, it is better to handle and transport with the help of lifting tools.
2. The total weight of machine must be ensured before handling.

## Environment Requirements for Installation.

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

## Electrical Connection/Disconnection & Operation

### FOR THREE PHASE

#### **1. Electrical connection:**

- 1.1. 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 disconnecting device**, which is in compliance with subclause 5.3 of EN60204-1, such as no fuse breaker or plug/socket combination.
- 1.2. For the protection of control device, we recommend the operator to supply **a fuse with 6A. current rating of fuse**, and the total length between fuse and connection terminal shall not exceed 1.5 m.
- 1.3. The **exact power source voltage, frequency, and number of phase** shall be checked according to the installation diagram and circuit diagram.
- 1.4. **The correct direction of grinder should be checked after connecting.**

#### **2. Electrical disconnection:**

- 2.1. The disconnection is carried out by hand-operated disconnecting device.
- 2.2. 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.

### **WARNING!**

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

## OPERATION.

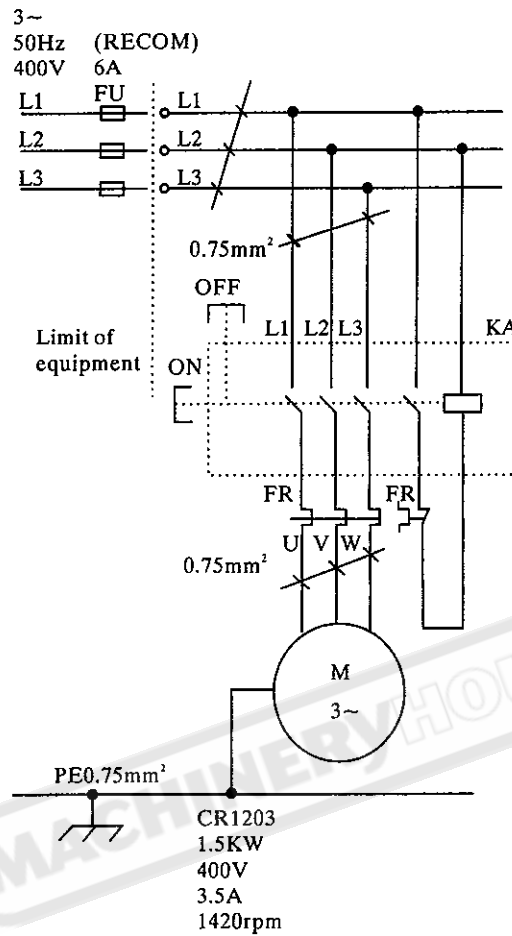
1. **"START"** : Push the button marked with " I ".
2. **"STOP"** : Push the button marked with " 0 ".

## MAINTNANCE:

1. Be sure to disconnect the machine from the power source.
2. If motor being overload, the overload relay will be active.
3. It is an automatic recovery type. The motor is liable to be restarted if overlord relay is cooled down automatically.

# Electrical circuit diagram

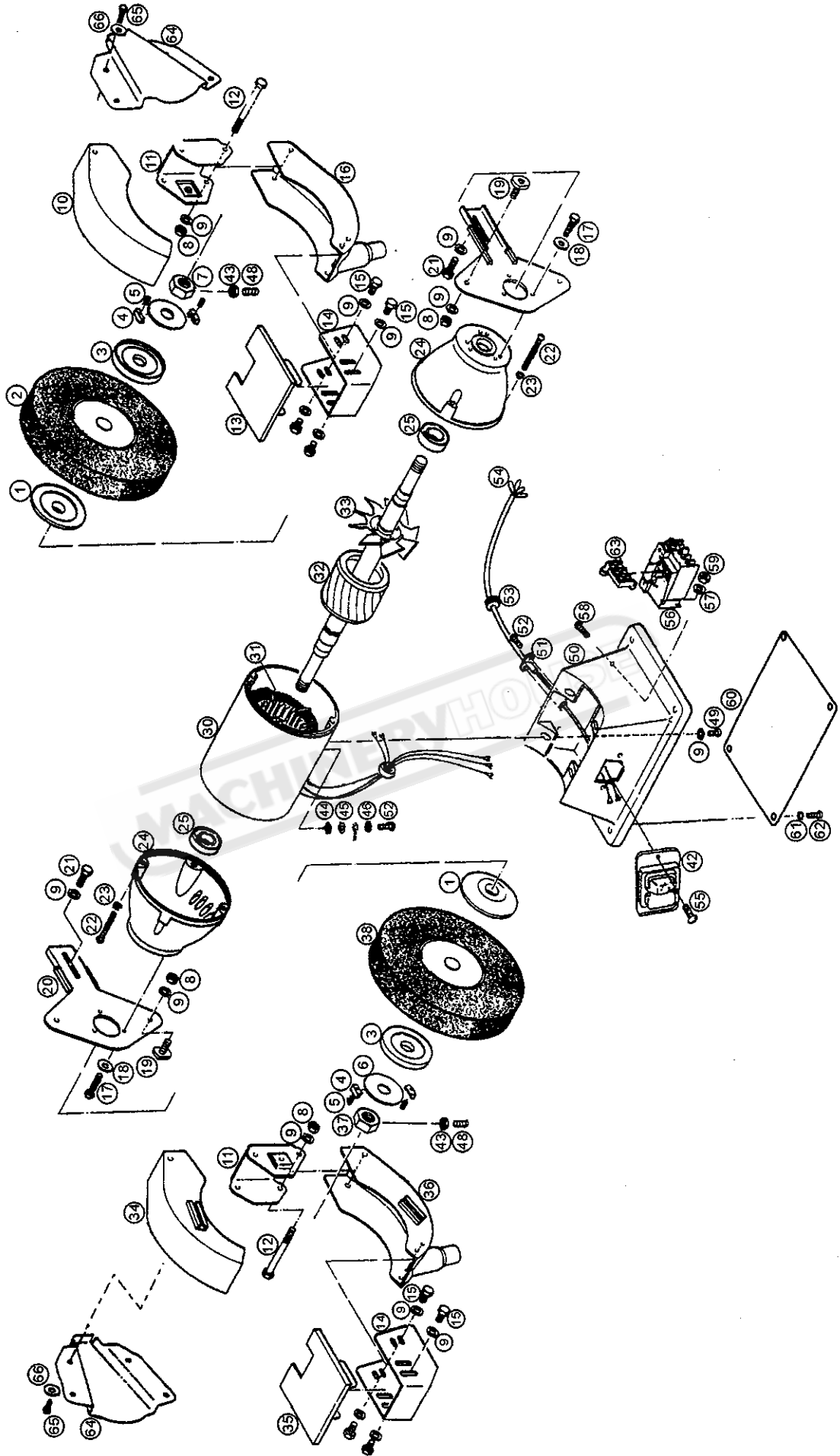
## GR 1203



### Electrical components parts list.

| Item Designation | Description & Function | Technical Data  | Remark     |
|------------------|------------------------|-----------------|------------|
| KA               | Magnetic Contactor     | 400VAC 10A      |            |
| FR               | Overload Protector     | 2.8-4.2/3.5A    | CE, IEC947 |
|                  | Cable                  | VCTF 4 x 0.75mm |            |

# Exploded View



# Parts List

| Ref. No. | Parts Name                      |
|----------|---------------------------------|
| 1        | Disc Washer                     |
| 2        | Grinding Wheel                  |
| 3        | Balancing Flange                |
| 4        | Balance Block                   |
| 5        | Set Screw                       |
| 6        | Washer                          |
| 7        | Shaft Nut                       |
| 8        | Hex. Nut                        |
| 9        | Washer                          |
| 10       | Upper Grinding Cover            |
| 11       | Connecting Plate                |
| 12       | Hex. Bolt                       |
| 13       | Toolrest Table (Right)          |
| 14       | Toolrest                        |
| 15       | Hex. Bolt                       |
| 16       | Lower Grinding Cover<br>(Right) |
| 17       | Hex. Bolt                       |
| 18       | Washer                          |
| 19       | Guide Pin                       |

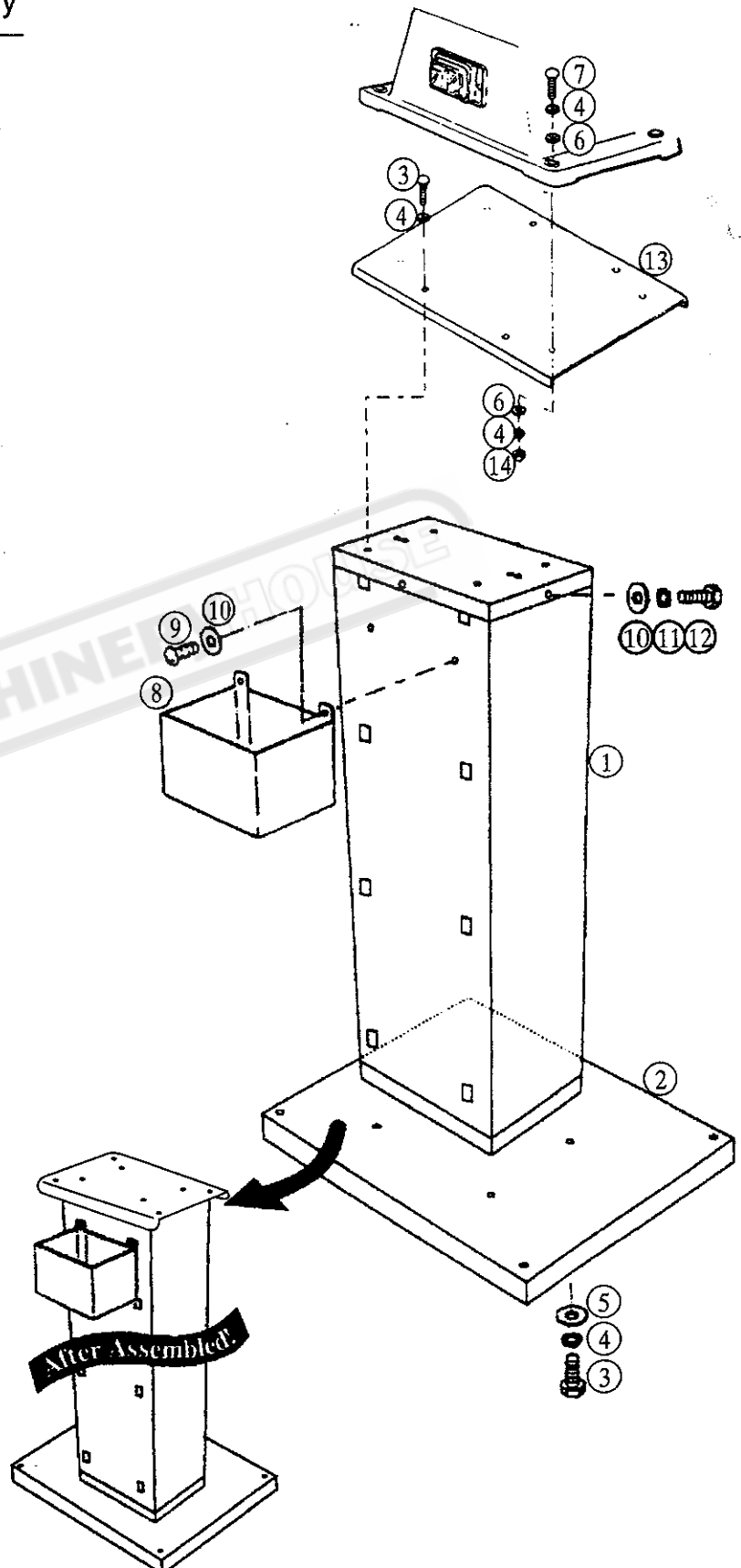
| Ref. No. | Parts Name                  |
|----------|-----------------------------|
| 20       | "T" Ficing Plate            |
| 21       | Hex. Bolt                   |
| 22       | Screw                       |
| 23       | Spring Washer               |
| 24       | Support                     |
| 25       | Ball Bearing                |
| 30       | Stator Housing              |
| 31       | Stator                      |
| 32       | Rotor                       |
| 33       | Fan                         |
| 34       | Upper Grinding Cover (Left) |
| 35       | Toolrest table (Left)       |
| 36       | Lower Grinding Cover        |
| 37       | Shaft Nut-Left Thread       |
| 38       | Grinding Wheel              |
| 39       | Grommet Rubber              |
| 42       | NVR                         |
| 43       | Hex. Nut                    |
| 44       | Ext. Washer                 |
| 45       | Copper Set                  |

| Ref. No. | Parts Name         |
|----------|--------------------|
| 46       | Int. Washer        |
| 48       | Set Screw          |
| 49       | Hex. Bolt          |
| 50       | Grinding Base      |
| 51       | Fixing Plate       |
| 52       | Screw              |
| 53       | Strain Relief      |
| 54       | Power Cord         |
| 55       | Screw              |
| 56       | Overload Protector |
| 57       | Spring Washer      |
| 58       | Screw              |
| 59       | Hex. Net           |
| 60       | Base Plate         |
| 61       | Washer             |
| 62       | Screw              |
| 63       | Wiring Board       |
| 64       | Side Cover         |
| 65       | Hex. Bolt          |
| 66       | Washer             |

# Cabinet Workstand (Optional)

## Unpacking and checking list

| Ref. No. | Parts Name /Description | Q'ty |
|----------|-------------------------|------|
| 1        | Stand                   | 1    |
| 2        | Bottom Plate            | 1    |
| 3        | Hex Bolt (M8x20L)       | 8    |
| 4        | Spring Washer(M8)       | 12   |
| 5        | Washer (M8x30x3t)       | 4    |
| 6        | Washer (M8x18x2t)       | 8    |
| 7        | Hex Bolt (M8x40L)       | 4    |
| 8        | Cooler Boxer            | 1    |
| 9        | Screw (M6x16)           | 2    |
| 10       | Washer (M6x16x2t)       | 6    |
| 11       | Spring Washer (M6)      | 4    |
| 12       | Hex Bolt (M6x12L)       | 4    |
| 13       | Stand Top               | 1    |
| 14       | Hex Nut(M8)             | 4    |



## EC DECLARATION OF CONFORMITY

According to the following EC Directive

- Machinery Directive: 98/37/EEC
- EMC Directive : 89/336/EEC, as amended by 92/31/EEC, and 93/68/EEC
- Low-Voltage Directive: 73/23/EEC, as amended by 93/68/EEC

The undersigned, Morgan Liu, representing Shine Tool Electric Co., Ltd., No.182, Sec.3, Ming Sheng Rd, Ta Ya, Taichung, Taiwan, R.O.C. manufacturer, declares that the machine described hereafter:

**Grinder;**  
**Model: GR1001, 1003; GR1203;**

Provided that it is used and maintained in accordance with the generally accepted codes of good practice and the recommendations of the instructions manual, meets the essential safety and health requirements of the Machinery Directive, EMC Directive and Low Voltage Directive.

For the most specific risks of this machine, safety and compliance with the essential requirements of the Directive has been based on elements of:

- the European Standard EN292-1: 1991-Safety of Machinery-Basic concepts, general principles for design.  
Part 1:Basic terminology, methodology.
- the European Standard EN292-2: 1991-Safety of Machinery-Basic concepts, general principles for design.  
Part 2:Technical principles and specifications.
- the European Standard EN60204-1: 1994-Safety of machinery-Electrical equipment of machines.  
Part 1:General requirements.
- the European Standard EN55014: 1992- limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar apparatus.
- the European Standard EN55104: 1994- immunity requirements for household appliances tools and similar apparatus.
- the European Standard EN50081-1: 1994-Generic emission standard.  
Part 1: Residual, commercial and light industry.
- the European Standard EN50082-1: 1994-Generic immunity standard.  
Part 1: Residual, commercial and light industry.

Date: JUL 30 2002

Signature: *Morgan Liu*

Qualification: Directeur