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# INSTRUCTION MANUAL

URL: <u>www.wim.com.my</u>



# **WIM200**

### (IMW-WIM200)

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#### **1.0 INTRODUCTION**

A few minutes spent reading about your new welding machine will enable you to operate your machine efficiently and benefit from its many features.

#### 2.0 ASSEMBLY INSTRUCTIONS

1. Slide the steel axle through the chassis placing a washer on the inside and outside of each wheel before inserting the split pins and securing. Fit the steel bracket with the rubber legs to the front of the chassis with the 2 bolts provided.

## Note! The machine must have the legs and wheel fitted before use, to ensure correct cooling airflow through the machine.

- 2. Install the cable liner to the welding gun cable as follows: (the torch comes with the liner fitted)
  - i. Lay the torch and liner out straight.
  - ii. Check that the liner has no kinks in it.
  - iii. Remove the liner-positioning nut at the machine end of the torch.
  - iv. Remove the nozzle and tip.
  - v. Gently feed the liner down through the bicox cable, from the machine end of the torch, taking special care not to kink it in the process. Once the liner reaches the back of the swan neck, it may be necessary to gently twist it through.
  - vi. With the liner now fully home, replace the liner-positioning nut (do not over tension). At the front end of the torch there will now be approx. 30cm (12 inches) of liner possible (file off if necessary). A sharp end could damage the cable liner and the contact tip of the welding torch. Ensure the wire is protruding from the swan neck.
  - vii. Gently stretch the liner a further 5mm (3/16 inch) and cut at the tip of the neck with a sharp pair of cutters. The liner will now spring back into swan neck by 4mm. Refit tip holder, tip and nozzle.

#### **3.0 SETTING UP FOR OPERATION**

#### 3.1 Fit Torch to Machine

Carefully align gas connection tube and trigger connection pins with central adaptor. Push in and tighten the lock nut. Open the wire feed pressure arm above the feed roll. Fit the feed roll to suit the diameter of wire to be used.

#### 3.2 Feed Roll Changing (if required)

Remove the feed roll-retaining knob. Pull off feed roll. When replacing the feed roll, note the wire size which is stamped on the side face of the roll. The required size must face inwards when the roll is refitted. Ensure that the Woodruff Key is not lost. Fit the feed roll and refit the retaining knob using thumb and forefinger. Do not over tighten.

#### 3.3 Fit the Reel of Welding Wire

Remove the red hand nut from the hub.Place the reel of wire on hub so that the wire will be drawn off from the top.Ensure that the pin on the hub locates in the hole in the side of the wire reel spool reel. Replace red hand nut.

#### 3.4 Overrun Adjustment

Tighten or unscrew the hub tension hand nut in the centre of the hub reel assembly unit until sufficient hub friction is achieved to prevent overrun. This adjustment should be done with full spool of wire at maximum wire feed speed. Do not over tighten.

#### 3.5 Wire Feeding

Release the wire end from reel and cut off the bent wire end, taking care that the wire does not unwind. Remove the nozzle and contact tip from the welding gun. Straighten about 10cm of the wire and make sure that the end is as blunt as possible (file off if necessary). A sharp end could damage the cable liner and the contact tip of the welding torch. Ensure the wire is placed correctly on to the feed rolls. Thread some wire through the feed rolls into the guide tube and liner of the welding cable. Close the wire feed pressure arm. The pressure adjustment of the feed rolls must be set so that the wire is fed evenly into the liner and light restriction of the wire can be made without feed rolls slipping.

# Note: Excessive pressure will cause flattening of the wire, loosening of the wire coating and undue wear of the rolls.

#### 3.6 Earth Connection

The earth connection from the welder should at all times be made directly on to the piece to be welded. The contact between the earth and the job should be as large and flat as possible. All rust and paint on the work piece should be removed.

#### 3.7 Gas Connection

Fit hose tail and nut to the gas hose and hold captive with the hose clamp,(found in the wire feed compartment of the machine adjacent to the wire feed rolls). Connect the gas hose to the regulator, open the cylinder valve and the gas flow rate is automatically set to 15 liters per minute.

#### NOTE: PLUG TOP MUST BE FITTED BY A QUALIFIED ELECTRICIAN

#### 3.8 Welding Voltage Adjustment

The welding voltage is regulated by a 6 position switch on the front panel.

# WARNING: If the welding voltage is set too high, the weld can burn through light gauge sheet metal. In this case, the voltage should be reduced. If set too low, the weld will have little penetration and will just "sit on" the plate.

#### 3.9 Wire Feed Speed

The wire feed speed is regulated from 0-18m/min by the potentiometer dial above the voltage switch. It is most important to select the wire feed speed in relation to the voltage setting. The correct wire feed/speed voltage setting is recognizable by:

- 1. A continuous cracking sound when welding, the characteristics of dip transfer of short-arc welding method normally used by small-medium sized MIG/MAG welders.
- 2. A correct shaped weld bead not too high or low with correct fusion along the edge of the weld, without undercut in the heat affected zone.

#### 3.10 Protection Device

Protection against the effects of overheating is provided by thermal protection devices mounted on the transformer assembly . In the event of overheating, power to the unit is interrupted, indicated by a light on the front panel. The protection device automatically resets once the unit cools.

#### Note: The fan continues to run during this time.

#### 3.11 SHIELDING GAS

The gas provides a shield over the weld pool to prevent contamination from the surrounding air. The shield gas also contributes to arc stability, weld strength, and appearance, so care should be taken to ensure that the correct gas type/mixture is selected for the metal being welded. The gas flow also provides cooling for the Mig Torch. The gas flow rate is preset by the regulator. Excessive gas flow rates should be avoided as they are wasteful, and in some instances, can cause weld porosity.

#### 3.12 WORK ENVIRONMENT

The machine should be used in doors always from strong draughts, which may cause gas dissipation. If the machine is to be covered, the natural cooling air circulation must not be interrupted. Before commencing welding, clear area of flammable materials.

#### 4.0 OPERATION

Set the voltage and wire feed controls to positions suitable for welding the thickness of the material being welded. Welding current varies in direct relationship to wire feed speed. For low welding current output, the wire feed speed control should be set at the low end of the wire feed speed scale. Turning the wire feed speed control knob clockwise, will result in increased wire feed speed and welding current. Welding voltage is adjusted to match the wire feed speed (welding current). For welding in the low current range, set the voltage switch to a low position number. Progressively select higher voltage positions with increases in wire speed. Low wire feed speed settings for a given voltage will cause a large ball to form on the end of the welding wire and cause excessive spatter. High wire feed speed settings for a given voltage will cause wire stubbing. Position the torch over the seam to be welded with the nozzle approximately 70° to the work surface. The nozzle to work distance should be approximately 10mm.

#### 4.1 WARN BY STANDERS TO SHIELD THEIR EYES

Lower your helmet and press the welding torch trigger. As the weld is deposited, push the torch from a right to left direction, slowly along the seam at a constant speed. Using the wire feed speed control; adjust for a 'crisp' sounding arc.

#### 4.2 SETTING UP GUN FOR ALUMINIUM WELDING

#### 1. The welding Gun

Remove the liner positioner nut from the adaptor block at the wire feed end of the gun cable. Remove the gas nozzle contact tip from the welding torch and remove existing liner if fitted. Carefully push the teflon liner, with brass neck liner attached, through the gun cable until the end of the liner protrudes from the swan neck and withdraw the liner back into the swan neck. Refit the contact tip and gently push the liner to seat it into the back of the contact tip. Replace the gas nozzle. At the adaptor block end of the gun cable, slide the brass nipple and '0' ring over the liner until they are located in the recess in the adaptor block and replace the liner retaining nut. **Do not cut the Teflon liner yet!!** 

#### 2. The Welding Machine

With a pair of long-nosed pliers, remove the steel inlet guide tube from the central adaptor on the face of the welding machine. With the Teflon liner still protruding from the adaptor block, feed the liner through the inlet of the central adaptor until the adaptor block is butted against the central adaptor. Fasten into position with adaptor block lock nut. Cut the liner in the shape of a 'V' using a sharp knife so that it butts up to the feed rollers.Remove the welding gun from the machine and cut the brass support tube so that it is 3mm shorter than the protruding Teflon liner. Slide the brass support tube over the liner and enter the Teflon liner with brass support tube fitted into the inlet in the central adaptor. Feed through until the adaptor block is butted against the central adaptor and tighten the lock nut. Replace the wire hub tension by backing off the nut in the centre of the hub until the tension of the hub is minimal. After confirming the wire feed roll is the correct size for the aluminium wire being used, and that the wire is fed through the gun cable, back-off the wire feed roll pressure screw until the feed roll no longer feeds the wire and retighten approximately 2 turns. Too much pressure will deform the soft aluminium wire and cause the wire to jam in the contact tip.

#### NOTE: TO HELP PREVENT WIRE DEFORMATION:

A 'U' groove feed roller is a better alternative than a 'V' groove feed roller.

#### 3. Contact Tip

Aluminium welding requires a contact tip with greater clearance than that used for steel. Special clearance contact tips are available for welding aluminium and are designed with a suffix e.g. 0.9A, 1.2A.

#### **5.0 WELDING HINTS**

#### 5.1 Aluminum Welding

Select a voltage setting approximately half way through the low range of your machine. Set the wire feed speed to approx. 10.

Remove oxide coating from weldments with a stainless steel wire brush. Initiate arc and lift the torch nozzle away from the weld pool until the nozzle/ weld distance is 12-15 times the diameter of the wire (e.g. 11-14mm for 0.9mm wire).

#### Direction of travel should be from right to left by pushing the gun. ALWAYS TEST SETTINGS ON A SCRAP PIECE OF MATERIAL FIRST

#### 5.2 Stainless Steel Welding

Always use a clearances size liner (e.g. 1.0mm liner for 0.8mm wire). Voltage and wire feed settings will be similar to those used for welding mild steel. However the different gas will increase the arc temperature. Ensure when welding that the torch nozzle is lifted away from the weld pool until the nozzle/weld pool distance is 12-15 times the diameter of the wire. A clearance size contact tip may be necessary in some situations of high torch heat. (e.g., 0.9Amm tip for 0.9mm wire, or 1.2Amm tip for 1.2mm wire).

#### 6.0 TECHNICAL DATA OF WIM200

MODEL	WIM200
Mains Supply	1-phase 50/60Hz
Rated input power (KVA)	8.6KVA
Voltage	240V
Max.Input Current	36A
Output Rating	200A/24V
Duty Cycle %	60%
Rating 60%	200A/24V
Rating 100%	155A/22V
Current Adjustment	30A-200A
Open Circuit Voltage	55V
Max.Welding Output	24V
Min.Welding Output	11V
Filter Wire Dimensions	0.8 ~1.0Ø <i>mm</i>
Static Characteristic	Flat (CV)
Dimensions $(L \times W \times H)$ mm	900 X 300 X 620
Weight	35kg
Insulation Class	Н
Degree of Protection	IPS21

#### 7.0 MACHINE CONTROLS/CONNECTIONS



- 1. Central Adaptor
- 2. Negative Connection
- 3. Voltage Adjustor
- 4. Speed Adjustor
- 5. Inching Switch
- 6. Motor Fuse
- 7. Power Lamp
- 8. Warn Lamp
- 9. Current Meter

#### 8.0 INTERNAL VIEW/PART DESCRIPTION



- A -Guide Tube
- B -Tensioning
- C -Pressure Wheel and Arm
- D -Feed Roll Secure Knob (Feed Roll Behind)
- E -Inlet Guide Tube
- F -Hub Level Assembly and Hub Nut
- G -Burn Back Adjustor

#### 9-0 PARTS LIST

#### 9.1 General View of WIM200



#### 9.2 WIM200 SPARE PARTS LIST

DWG NO	PART NO	DESCRIPTION	QTY
01	THA-I001	MIG TORCH ADAPTOR INSULATOR (TA 350/500)	1
02	THA-TR01	FEEDER CENTRAL ADAPTOR INCLUDE SIGNAL WIRE AND GAS HOSE(TOPREACH)	1
03	EVAO-KN00	VOLUME KNOB (MO-895/T)	3
04	ESWO-0521	ON/OFF SW VM-13P 5A 125 250VAC (RED)	1
05	MTA-1R99	DIGITAL DISPLAY METER 1.999V C/W CABLE DQ015005	1
06	SKT-CX58	PANEL SOCKET TBE 35-50-70 (35-70mm2) (IT160)	1
07	EVLE-4701-005	4.7K OHM POTENTIOMETER, 0.5W	1
08	EVLE-1001	VOLUME CONTROL B1K ANGLE PIN (RV24A-10) ALPHA	1
09	EFUS-0050	GLASS FUSE MFS 5A 250V (UL/CSA)	1
10	EFUH-B001	FUSE HOLDER (BIG)	1
11	ELED-001G	L.E.D (GREEN)	1
12	ELED-001R	L.E.D (RED)	1
13	HNP-W001	ANDLE W/"WIM" LOGO	1
14	TRC-IMG200-DCL	IMG200 CHOKE (W. SHIP)	1
15	CBA-IMG2C-1	MIG220 CAPACITOR BOARD WZ-72	1
16	STRM-WIM200-1	INVERTER MIG WIM200 MAIN TRANSFORMER	1
17	SCBA-IMG2P-1	MIG220 POWER BOARD	1
18	WLR-1600	6" BLACK RUBBER WHEEL (160MMX21MM) (MIG 185/250E)	2
19	WLP-4635	WHEEL:NYLON SWIVEL 50MM(O) X 65MM (H) (BLACK)	2
20	EDDT-300-601	FAST RECOVERING DIODE DKR400AB60 (SANREX)	1
21	COF-2515	FERRITE CORE(25MMX15MMX12.5MM)	2
22	SEC-IMG200	IMG200 CURRENT SENSOR (WELDER	1
23	TRF-IMG200-1	IMG200 FILTER CORE	1
24	CBA-IMG2DC-1	MIG220 POWER BOARD PK-64	1
25	CBA-IMG2M-1	MIG220 CONTROL BOARD PK-63	1
26	STRM-I56IC-1	IPS56 DC REACTOR	1
27	ERCB-PC10-35	BRIGDE RECTIFIER BR3510(HY)	2
28	FDW-3110-32A	WIRE FEED MECH CWF-3110-4 C/W 80W MOTOR & FEED ROLLER 1.0/1.2MM (40X10X32)MM & COVER	1
29	EVLE-1003-R5	VOLUME B100K ANGLE PIN (RV24A-10) 7C2 ALPHA	1
30	VVG-24DC-ZK	FITTING (REFER TO VVG-24AC-ZCQ20B)	1
31	SWIS-1400-1	WIRE SPOOL 140MM (PLASTIC) COMPLETE SET	1
32	SCLH-MH14-Q1115C	GAS HOSE CLIPPER (55 X 15 X 1MM) (R.CHROMED)	1
33	HLP-0001	HOLDER HAND (PLASTIC) 100pcs per Bag	1
34	SCHN-0001	CHAIN (1/8" GALVANISH" ) MIG 185 (3FT / 176g)	1
35	HOB-P150	HOSE BINDER(PLASTIC) (BLACK) 10MM	2
36	ECBM-30-220	MOLDED CASE CIRCUIT BREAKER 30A/230V 50/60HZ	1
37	BWC-RAH-1238	BLOWER: COOLING FAN RAH 1238B1 BALL BEARING (IMX)	1
38	SHT-3000-75	SHUNT:300A 75MV	1

#### **10.0 WELDING FAULTS**

FAULT		POSSIBLE CAUSE AND REMEDY		
1 Weld deposit 'stringy' and incomplete		Torch moved over workpiece too quickly		
	1 b	Gas mixture incorrect		
2 Weld deposit too thick		Torch moved over workpiece too slowly		
	2 b	Welding voltage too low		
3 Arc unstable excessive spatter and		Torch held too far from the workpiece		
weld porosity		Rust grease or paint on workpiece		
	3 c	Insufficient shielding gas; check gas contents		
		gauge, regulator setting and operation of gas		
		valve		
4 Wire repeatedly burns back	4 a	Torch held too close to the workpiece		
	4 b	Intermittent break in the welding circuit caused		
		by:		
		(1) Contact tip loose-tighten		
		(2) Contact tip damaged-replace		
		(3) Welding wire or liner corroded-replace wire or liner		
	4 c	Wire feed slipping caused by:		
		(1) Restriction in liner (such as kinks) or		
		contact tip-check and replace if necessary		
		(2) Worn-out feed rolls-replace		
		(3) Guide tube or pressure roll alignments		
		incorrect.		
5 Burning holes in the workpiece	5 a	Torch moved too slowly or erratically		
	5 b	Welding volts too high		
	5 c	Wire feed speed too high		
6 Lack of penetration	6 a	Torch moved too fast		
	6 b	Welding volts too low		
	6 C	Wire feed speed too low		

#### SHIELDING GAS TABLE MIG WELDING

Metal	Gas	Remarks
Mild Steel	CO2 Argon + CO2 Argon + CO2 + Oxygen	Argon controls spatter Oxygen improves arc stability
Aluminium	Argon Argon Helium	Stable Arc-Sound welds Higher heat input Suitable for heavy sections
Stainless Steel	Argon + CO2 + Oxygen Argon + Oxygen	Arc stability Minimum spatter
Copper, Nickel and Alloys	Argon Argon Helium	Suitable for light gauges Higher heat input Suitable for heavy sections

#### **11.0 CIRCUIT DIAGRAM**



#### SAFETY OBSERVATION



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#### **SAFETY OBSERVATION**



#### THE WIM GENERAL WARRANTY

Your welding machine is warranted by WIM to be of satisfactory quality, fit for its purpose and to comply with applicable WIM specification for a period of twelve (12) months from the date off purchase (verified by reference to your proof of purchase). Not applicable for consumable parts and accessories.

This warranty does not apply if the welding machine has:

a) been mishandled, misused, willfully damaged, neglected, improperly tested, repaired by unauthorized person, altered or defaced in any way.

b) A defect arising as a result of any failure to follow instructions either on the manual or product specification.

c) A defect which has arisen has arisen from the use of non-WIM approved accessories or ancillary items attached to or in connection with the welding machine.

d) The warranty sticker removed or tempered with.

The manufacturer reserves the right to:

a) Make changes in technical and product specification without prior notice.

b) Waive the warranty on visual defect not reported within seven (7) working days.

#### (WIM一般的保证书)

由购买日期算起的十二个月内,(由购买证据所鉴定)WIM保证您的焊机品质令人满意,功能良好及符合WIM的相关规格。这保证不包含消耗物品和配件。

这保证不包含以下情况之产品:

- a) 焊机经过不适当的处理、误用、蓄意毁坏、疏忽、不正确地做试验、没有经过WIM批准人员 修理 、改造或磨灭。
- b) 没有跟从手册或在产品规格里的指示所引起的缺点。

c) 使用没有得到WIM所批准的配件或跟焊机附著或连接的物品。

d) 保证贴纸已被移位或破坏。

厂商保留以下权力:

- a) 在没有优先得通知下更改技术规格。
- b) 在七天工作天内, 外观不良必须提出, 否则作废。

#### WIM MIG 01 WARRANTY

1) General: WIM products are warranted against manufacturing defects for one (1) year following date of shipment to the original user. With exception of item listed in paragraphs 2 through 7 below.

2) Major Power Components: Main power transformers are warranted for two (2) years following date of shipment to the original user. WIM will cover parts and labor in year one and replacement only in year two,

3) Major Power Rectifiers: Silicon diodes and power SCRs used in the welding output circuit of equipment are warranted for one year following date of shipment to the original user.

4) Major PCB Component: Main control board will be warranted for a period of one year from the date of purchase (verified by reference to proof of purchase).

5) Expendable Items: Primary and secondary switch contacts, cable connectors, fuses, bulbs, filter, ceramic nozzles, collets body, handle, leads connector and trigger switch are worn or consumed in the normal process of welding or cutting and are therefore warranted only if found to be defective prior to use.

6) Semiautomatic Item: Torch body and cable are warranted for fourteen (14) days from the date of purchase (verified by reference to your proof of purchase).

7) Modification and Misuse: This warranty does not apply to products which have been modified in any way by any party other than WIM: nor to products which have not been installed and operated in accordance with applicable industry standards: nor to products which have been used other than under the usual conditions for which designed: nor to products that have not received proper care, lubrication, protection and maintenance under supervision of competent personnel. **Use of a product after discovery of a defect voids all warranties.** 

#### **DISCLAIMER OF WARRANTIES**

There are no warranties, which extend beyond the description on the face hereof, except as specifically provided in the expressed warranties set forth above. All products are sold "as is". WIM makes no warranties, expressed or implied, of merchantability or fitness for a particular purpose.

#### WARNING

At all times, safety is an important consideration in the installation, servicing, and operation of the product, and skilled, qualified technical assistance should be utilized at all times. Specific recommendations are included in instruction manual. The users are reminded to read carefully the steps before carrying out welding jobs.

#### <u>(保证书)</u>

1)一般:除了以下第二至第七段所注明之项目,所有WIM之产品对制造上之不良享有一年之使用保证,保用期限由交货至原 有使用者之日期算起。

2)主要的确电力元件:主变压器有二年的保证,由交货至原有使用者之日算起。在第一年,WIM所保证的包括零件更换和工钱,在第二年只保证零件更换。

3)主要的电力整流器:在焊接输出的线路之硅二极体及SCR有一年的保证,由交货至原有使用者之日算起。

4)主要的电路板元件:主控制板从购买日期算起有一年保证。(由购买证据所鉴定)

**5**)消耗品:开关接触器、电缆连接器、保险丝、灯泡、过滤器、陶瓷喷咀、筒夹、把手、插座和触发开关在正常焊接或切割中会磨损或消耗,因此只有用前的不良可享有保证。

6)半自动项目: 焊枪体和电缆从购买日期算起有十四天保证。(由购买证据所鉴定)

7)修改和误用:这保证不含包以下情况之产品: (a)经过WIM以外的团体或个人之修改, (b)没有按照通用的工业标准来安装和操作, (c)没有在原有设计的寻常情况下使用, (d)没有在可胜任的人监督下给予适当照顾、润滑、保护和保养。

#### 保证之声明

除了特别提供更新的明确说明保证,任何超出於此说明范围之情况皆不获保证。全部产品照原样出售。对於其他特殊用途WIM一概不作保证。

#### 注 意

无时无刻,在安装、维修和操作本产品时,安全是一项很重要的考虑因素。应该时常利用合格的技术援助。明确的建议已包含在附上的使用自手册里。在还没进行焊接工作之前使用者要记得仔细读预防步骤.