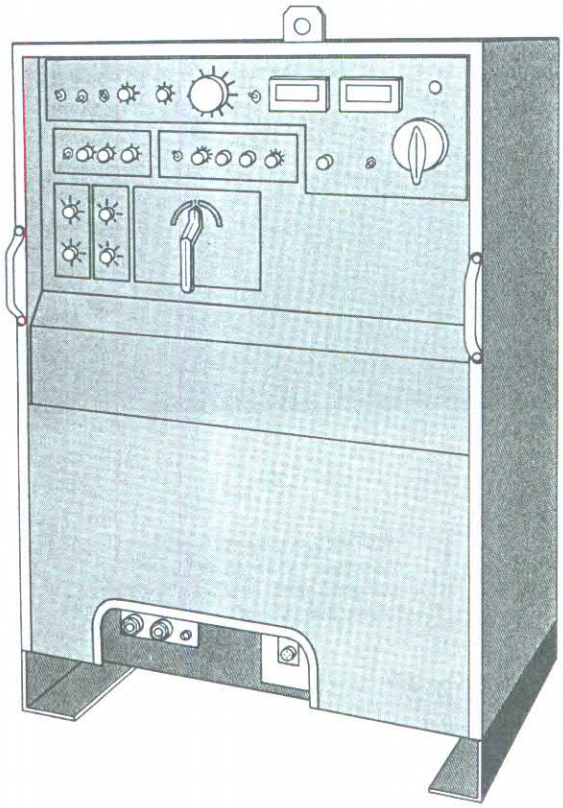
MAY 1989
EFFECTIVE WITH SERIAL N° 086594
FORM: MME 201/5 - 89

MODEL

SYNCROWAVE 375



INSTRUCTIONS MANUAL AND PARTS LIST

MANUALE D'ISTRUZIONE E PARTI DI RICAMBIO

MANUEL D'INSTRUCTIONS ET PIÈCES DÈTACHEES

MANUAL DE INSTRUCCION Y RECAMBIOS

interlas
POSTBUS 1055 3180 AB ROZENBURG TELEFOON 01819 - 12177
)2) 9881552

SYNCROWAVE 375

Specifications
Subject to change whithout notice.

Caracteristiques tecniques
Sujettes à des changements sans avis préalable.

Dati tecnici
Soggetti a variazioni senza preavviso.

Datos tecnicos
Sujetos a variacion sin previo aviso.

Model *Modello* Modèl *Modelo*	Rated output at 35% duty cycle *Prestazioni al 35% di intermitt.* Intensité nominal a 35% du cycle *Intensidad al 35% ciclo trabajo*	Current range *Gamma di regolazione* Gamme de intensité *Escala de corriente* A	Open circuit voltage *Tensione a vuoto* Tension à vide *Tension vacio* V max	Power input at rated load 50Hz. *Potenza assorbita a 50Hz.* Puissance absorbée 50Hz. *Potencia assorbida* Ampère (*) 220 V monof.	380 V monof.	440 V monof.	KVA	KW	Overall dimensions *Dimensioni di ingombro* Dimensions hors tout *Dimensiones* mm	mm	mm	Net weight *Peso netto* Poids net *Peso neto* kg
Syncrowave 375	375 A - 35 V	3 ÷ 375	80	159	92.3	79.5	35	16.8	1110	804	554	318
Syncrowave 375 "P"				134	78	67	29.5					320

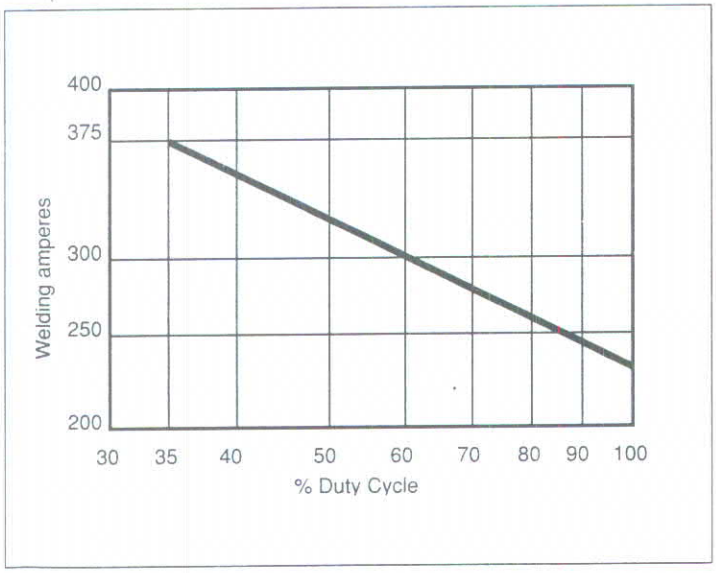


Fig. 2
Duty Cycle Chart
Diagramma ciclo di lavoro
Facteur de marche
Diagrama ciclo de trabajo

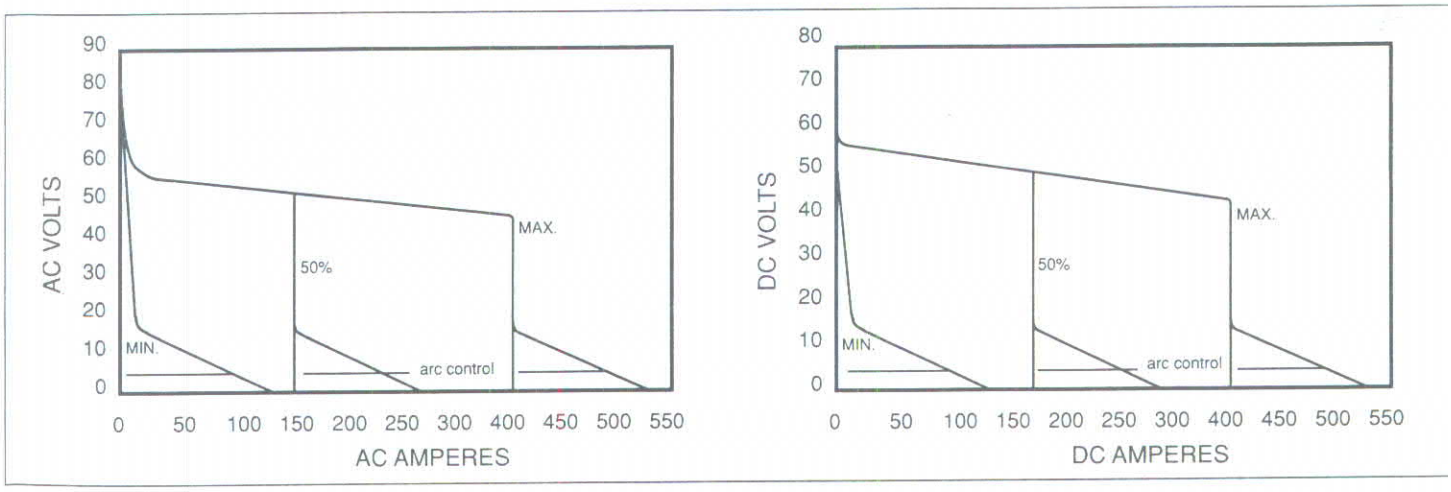


Fig. 3
Volt Ampère Curves Curve Volt-Ampère
Courbes Volt- Ampères Curvas Volt-Amperios

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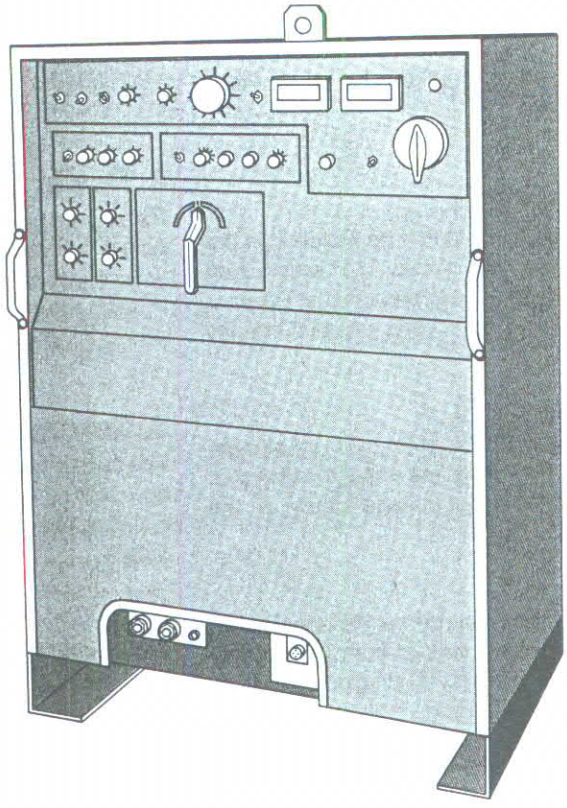

INSTRUCTIONS MANUAL

work station provided that the power switch is in the ON position.
If a remote contactor control is to be used, make connections to the **remote contactor and control** receptacle as instructed in section **installation**.
If a remote contactor control is not to be used, place the **out contactor** in the ON position.
When in the ON position, weld output is available as soon as and for as long as the power switch is ON.
When a remote contactor control is to be used, the **contactor** switch must be placed in the **remote** position. With a remote contactor control, weld output is available whenever, and for as long as, the remote contactor switch is closed.

Caution

Whenever the **contactor** switch is in the ON position, open-circuit voltage will be present at the secondary terminals as long as the power switch is on ON.

7. High frequency switch (Fig. 1)

The high frequency switch has three positions which determine the length of time the high frequency is either ON or OFF.

A. START POSITION
When in the start position, high frequency is present at the welding electrode when the arc is initiated and for approximately 2 seconds. Once the 2 seconds time interval has expired, and even though the remote contactor control switch is closed, the high frequency is deenergized.
High frequency is present again automatically whenever the arc requires high-frequency.

B. CONTINUOUS POSITION
When the **high frequency** switch is in the continuos position, high frequency will be present whenever weld current is available at the output terminals.
If the **crater fill** switch is in the out position, high frequency will be shut down when the remote control switch is released.
If the **crater fill** switch is in the "IN" position and the remote control switch is released, high frequency will continue to be present until the end of the crater fill period.

C. OFF POSITION
High frequency is not available with the switch in the OFF position even if the remote contactor control switch is closed.

8. Arc control device (Fig. 1)

The **arc control** Knob and switch, allows to select numerous and different arc characteristics and you can use it to weld w/coated electrode.

A. Rotate the knob towards the right end when you use special electrodes and you make position welds.

B. You can use the central position in the most part of welding.

C. Rotate the knob towards the left end and you will obtain an arc characteristic very soft with less penetration.

D. The **arc control** device must be excluded (turned off) when you weld with tungsten electrode. (TIG)

9.Post-flow gas control (Fig. 1)

An adjustable 0 to 60 second coolant gas **post-flow time** control is provided for controlling the period of time shielding gas is allowed to flow after the arc is extinguished.
The **post-flow time** control governs the operation of a post flow timer within the welding power source.
Rotating the control in a clockwise direction increases the post-flow time. The scale surrounding the **post-flow time** control is calibrated in seconds to aid in the selection of a post flow time period suited to the individual welding operation.
As soon as the arc has been extinguished the post flow timer begins to time out the selected period of post-flow time.

Note

The post-flow timer is automatically disabled whenever the **contactor** switch is in the ON position and the remote contactor control is disconnected from the welding power source, despite the position of the **post-flow time** control.
To prevent the gas valves from being operable when the Shielded Metal Arc (SMAW) welding process is used, ensure that the **contactor** switch is in the ON position and the remote contactor control is disconnected from the welding power source.

10. Crater fill switch/control (Fig.1)

Rotating the **crater fill time** knob provides a means for selecting wheter the crater fill circuit is operative or not.The knob allows the crater-fill circuit to be operative.
The crater-fill circuitry provides a gradual decline of weld current from the selected weld current to a low level of weld current. This weld output declination occurs over a 15 second time interval adjustable.
By utilizing the crater-fill circuitry in the Gas Tungsten Arc (GTAW) welding process, better weld puddle solidification at the end of the weld is achieved.

Note

The **crater-fill** should be excluded when employing the Shielded Metal-Arc (SMAW) welding process.

11. AC balance control (Fig. 1 and 4)

The **AC balance** control alters the basic Gas Tungsten-Arc (GTAW) welding output wave shape to provide either better cleaning action or deeper penetration. Rotating the control clockwise towards the **max penetration** position yealds deeper penetration.
Rotating the control counterclockwise towards the **max cleaning** position yealds more cleaning action of the workpiece (a definite asset when welding oxideforming materials such as aluminium or magnesium). When the control is in the "2" position, the basic weld output wave shape is unaltered and a compromise between good penetration and good cleaning action will be achieved.

17. Pulses per second control (optional)

The **pulses per second** control provides pulse frequency select of the welding power source out current. The **pulses per second** control in a clockwise direction increases the pulse frequency, and it is adjustable from 0.25 PPS to 10 PPS.
The scale surrounding the **pulses per second** control is calibrated in pulses per second to aid in the selection of a pulse frequency suitable for the application.

Note

Background **% ON time** and **pulses per second** controls are of the continuous type, thereby making it possible to adjust this control while welding.

18. Background current control (optional)

The **background** and **current control** provide current selection within the welding power source output range being used. The setting of the **background current** control establishes the output current backround level from which the output current travels to the output current pulse level established by the setting of the ampere adjustment. The scale surrounding the **background current** control is calibrated in percentage and should be miscountred as an amperage or voltage reading.
It is recommended that meters be read whenever it is necessary to know the amperage and voltage output.

Note

The contacts of the **current control** and **background current control** are of the continuous type thereby making it possible to adjust these controls while welding.

19.Pre-flow gas control and switch (optional)

(Fig.1)
An adjustable 0 to 15 second gas **pre-flow time** control can be provide for controlling the period of time shielding gas flows before the arc initiated. The **pre-flow time** control governs the operation of a pre-flow timer within the welding power source.
As soon as the remote contactor control switch has been closed, the pre-flow timer begins to time out the selected period of pre-flow time. Once the timer has timed out, the gas valves remain open and the contactor closes providing weld power.

20. Spot time control and switch (optional) (Fig.1)

An adjustable 0 to 5 second **spot time** control can be provided for controlling the period of the time weld power available for spot welding. Rotating the knob in a clockwise direction increases the spot time. The scale surrounding the **spot time** control is calibrated in seconds to aid in selection of a spot time period suited to the individual welding operation. The spot weld timer begins to time out as soon as an arc is initiated. When the time set on the **spot time** control is elapsed, weld current is cut off and the post-flow timer starts the crater- fill. Upon closure of the remote contactor control switch, the operator may proceed with establishing an arc. As soon as an arc is struck, the spot weld timer begins timingout. The remote contactc control switch must remain closed throughout the entire spot weldin time interval.

21. Electroslope (optional) (Fig.1)

The electroslope allows the operator by means of a push botton cor nected to the remote control receptacle, with 4 successive pulses, t select the welding conditions and their duration.
The conditions the electrosope allows to select are: initial curren unslope time, downslope time, final current.
The operator can also control the single conditions by means of th control placed on the electroslope front panel.
When you use the electroslope it is useful that current adjustmer control would be on the **panel** position and the welding current will b adjusted by means of a knob placed on the welding power source

A. ELECTROSLOPE SWITCH (optional)
The switch has two position: I (ON) and O (OFF)

B. INITIAL CURRENT ADJUSTMENT (optional)
It allows to adjust the value of the desired initial current.

C. UPSLOPE CURRENT (optional)
Upslope time, from initial value to the prefixed value by means of th welding power source adjustment knob, can be adjusted to a ma: mum of 20 sec.

D. DOWNSLOPE TIME (optional)
Downslope current time, from welding value to final value, can l adjusted to a maximum of 20 sec.

E. FINAL CURRENT ADJUSTMENT (optional)
It allows to adjust the final current value desired.

22. Pulse continuous switch (optional) (Fig.1)

If you place the pulse continuous switch on **pulse** position the cc tactor will open, if you release the torch push button. If you place t pulse- continuous switch in the continous position you can relea the push button without opening the contactor. At the end of t welding you must act on the push-button again to stop the arc.

MAINTENANCE

Caution

Ensure that the branch circuit or main disconnect switch is open or the electrical input circuit fuses are removed before attempting any inspection or work on the inside of the welding source. Placing the welding power source **power** switch in the OFF position does not remove voltage from the power terminals inside the welding power source.

1. Fan motor

All models are equipped with an exhaust fan and rely or forced draft for adequate cooling.
The fan motor is manufactured with lifetime-lubricated sealed ball bearings and no attention should be required.

2. International cleaning

Depending on the location of this unit and the amount of dust and dirt in the atmosphere, periodic internal cleaning of this unit may be accoplished by removing the out enclosure and blowing with compressed air or using vacuum suction around the internal components.

3. Spark gap adjustment (Fig. 5)

The spark gaps are normally set at 0.2 mm clearance at the factory. It will be necessary to periodically readjust these after extended operation.
Usually inspection and adjustment every three or four months will sufficient. Readjustment is indicated when intermittent operation of the gaps is noted. Usually this occurs when the setting has increased to 0.3 mm or greater.

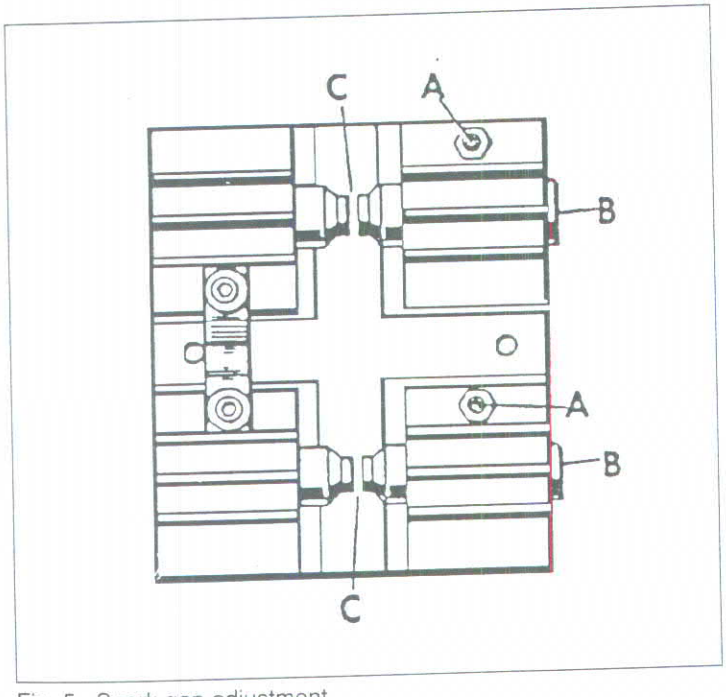

Fig. 5 Spark gap adjustment

Note

Cleaning or dressing the points of the spark gaps is not recom mended, as the material at the points is tungsten and is impossible to file. The entire point should be replaced when tungsten section has completely disappeared.
Generally speaking, the high frequency output varies directly (up to a certain point) with the spark gap spacing. In extreme cases where the greatest amount of high frequency is needed, it may be necesary to adjust the spark gap setting to 0.25 mm. This also increases the high frequency radiation and it is suggested that the minimun gap setting (0.18-0.2 mm), consistent with good welding operation, be used. To adjust spark gaps, proceed as follows:

A. Loosen screw A on both sides

B. Place feeler gauge of proper thickness between gaps c.

C. Apply slight pressure against point B to feeler gauge is held firmly in gap.

D. Tighten screw A.

4. Thermal protection

The unit is protected against thermal overload by normally-closed thermostar TP1, located in the main transformer. If TP1 opens the weld output stops, allow a cooling period with the unit on (fan running before resuming operation.

MODEL

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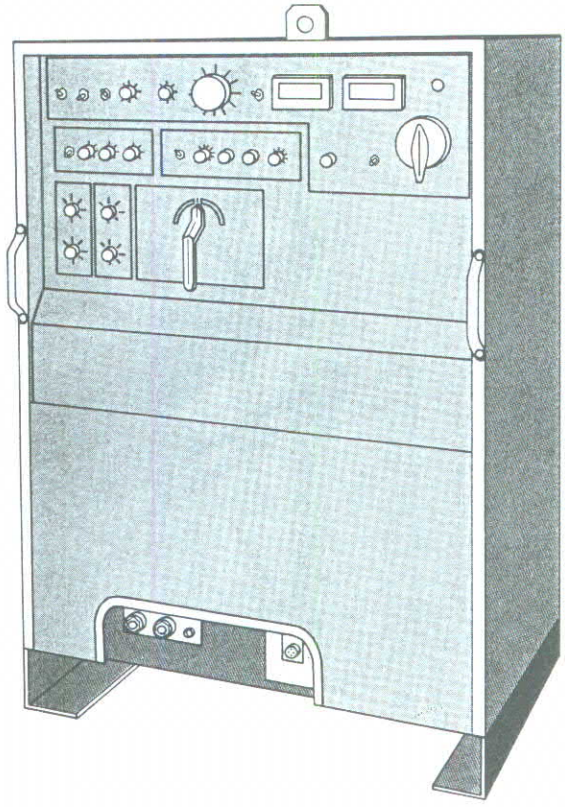

PART LIST
PARTI DI RICAMBIO
PIECES DETACHEES
RECAMBIOS
ERSATZTEILE

SYNCROWAVE 375

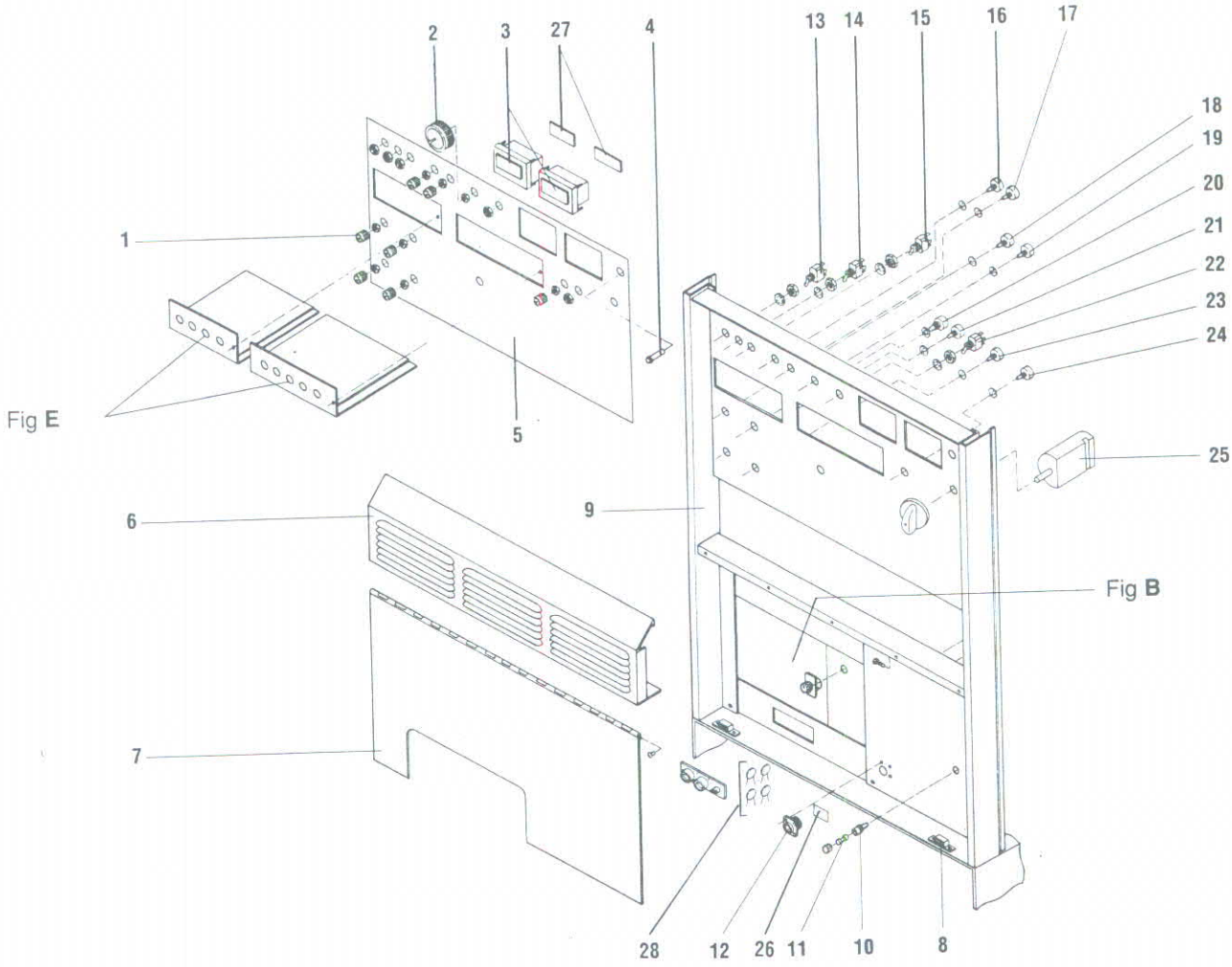

Fig. A

ITEM	CODE	DWG	Q.TY	SYMBOL
1	000097922	BP.2.0.20	7	
2	00097926	BP.2.0.21	1	
3	000119265	BP.48.1	2	DA–DVM
4	056072050	GI.16.0.8	1	PL
5	316029565	NB.3.0.3	1	
6	116122107	BP.1.0.1	1	
7	116007068	NB.0.0.3	1	
8	156160002	DB.0.0.3	2	
9	117032050	NB.3.1	1	
10	056092075	MI.3.0.3	1	
11	056092066	DI.2.0.3	1	F1
12	056076170	FS.1.0.3	1	RC2
13	056067101	DZ.12.0.5	1	S3
14	056067139	BP.2.0.13	1	S8
15	056067018	HE.3.0.6	1	S11
16	056059169	BP.2.0.3	1	R9
17	056059231	MG.1.0.3	1	R6–S10
18	028066115	NB.13	1	TD3
19	056059182	DC.0.0.9	1	R10
20	028066113	N.B.12	1	TD2

ITEM	CODE	DWG	Q.TY	SYMBOL
21	056059237	NB.3.0.1	1	R7–S7
22	056067104	OB.0.0.10	1	S2
23	056059238	NB.3.0.2	1	R8–S6
24	056059170	BP.2.0.4	1	R22
25	057066014	BP.2.3	1	S1
26	057084037	NB.0.7	1	PC5
27	057084036	NB.0.6	2	PC6
28	027024010	UM.2.5	4	C9-10-17-18

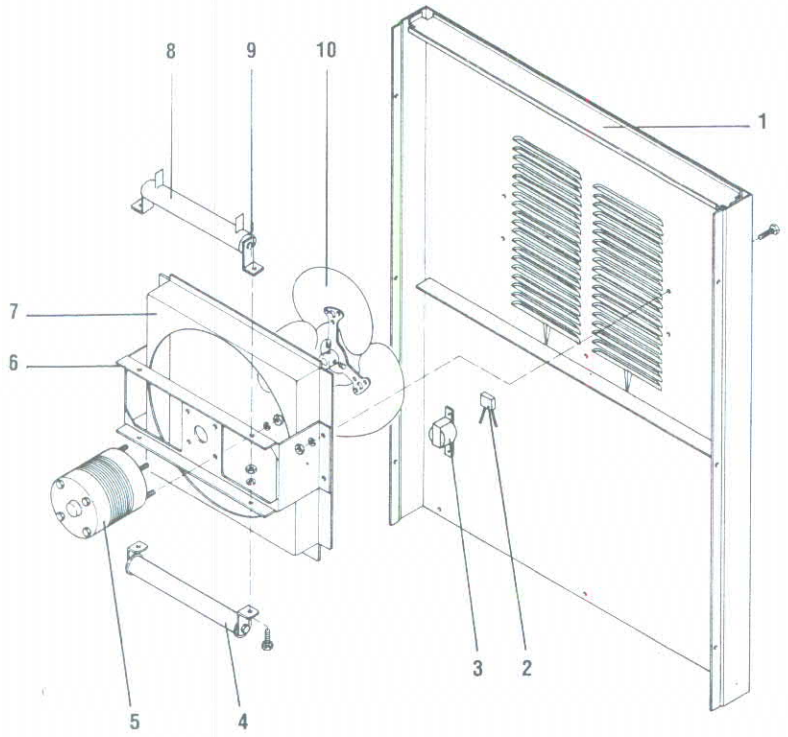

Fig. D

ITEM	CODE	DWG	Q.TY	SYMBOL
1	117032042	BP.1.2	1	
2	027024066	NB.0.8	1	C11
3	056076146	BP.2.0.6	1	RC1
4	056059229	MG.2.0.2	1	R2
5	057010030	UO.23.1	1	FM
6	116122122	UM.3.5.1	1	
7	116120001	DU.4.2.2	1	
8	056059230	MG.5.0.3	1	R3
9	156005023	DZ.13.1.11	4	
10	356078019	UO.3.0.4	1	

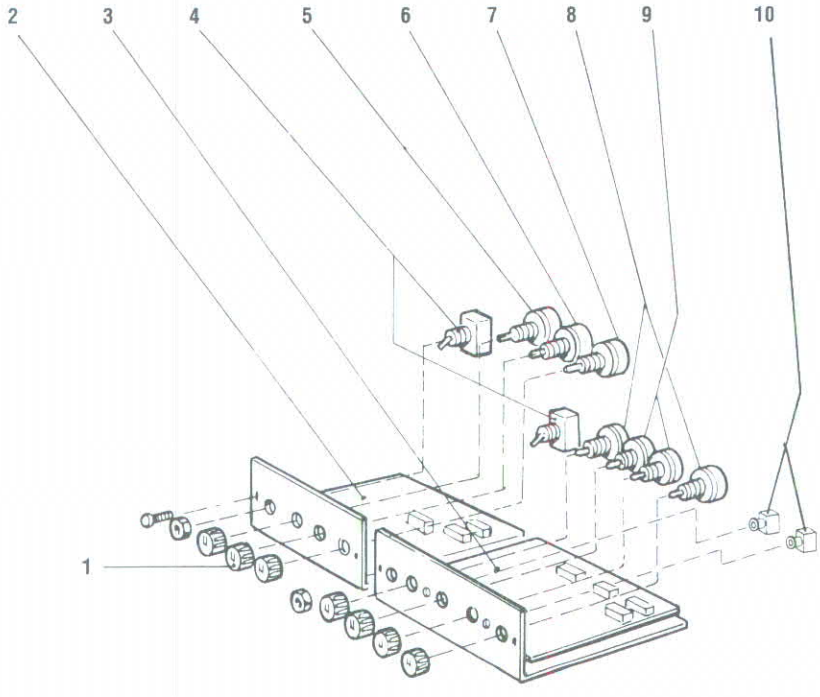

Fig. E

ITEM	CODE	DWG	Q.TY	SYMBOL
1	000097922	BP.2.0.20	7	
2	057084030	MG.11.1	1	PC–Pulser
3	057084029	MG.10.1	1	PC–Sloper
4	056067021	DZ.12.0.7	2	S12–S13
5	056059182	DC.0.0.9	1	R19
6	056059213	EE.2.0.1	1	R18
7	056059214	EE.2.0.2	1	R17
8	056059212	EE.3.0.2	2	R13–R16
9	056059234	MG.10.0.3	2	R14–R15
10	056076187	MG.10.0.4	2	