

1. Safety Symbol Definitions

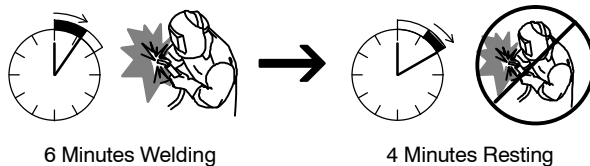
	DANGER! – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text. DANGER ! - Indique une situation dangereuse qui, si elle n'est pas évitée, entraînera la mort ou des blessures graves. Les éventuels risques sont représentés par les symboles joints ou expliqués dans le texte. Fsafe1 2013-10		Beware of electric shock from welding electrode or wiring. Touching the electrode while in contact with the work or ground can cause electric shock. Always wear dry gloves. Keep all panels and covers closed. Attention au risque d'électrocution due au contact avec l'électrode de soudage ou les fils. Le fait de toucher l'électrode tout en étant en contact avec la pièce ou la terre peut provoquer une électrocution. Toujours porter des gants secs. Tous les panneaux et couvercles doivent rester fermés. Fsafe5 2013-10
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text. Indique une situation dangereuse qui, si elle n'est pas évitée, entraînera la mort ou des blessures graves. Les éventuels risques sont représentés par les symboles joints ou expliqués dans le texte. Fsafe2 2013-10	 	Hot parts can burn. Allow cooling period before working on equipment. Do not touch hot parts bare handed. To handle hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns. Les pièces chaudes peuvent provoquer des brûlures. Prévoir une période de refroidissement avant de travailler à l'équipement. Ne pas toucher à mains nues les parties chaudes. Ne pas toucher aux pièces chaudes, utiliser les outils recommandés et porter des gants de soudage et des vêtements épais pour éviter les brûlures. Fsafe13 2013-10
NOTICE NOTE 	Indicates statements not related to personal injury. Signale des consignes non associées aux dommages corporels. Indicates special instructions. Fournit des instructions spéciales. Fsafe3 2013-10		Wear safety glasses with side shields. Porter des lunettes de sécurité avec écrans latéraux. Fsafe8 2013-10
Proposition 65 Warnings Welding or cutting equipment produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 and seq.) This product contains chemicals, including lead, known to the state of California to cause cancer, birth defects, or other reproductive harm. Wash hands after use. Les équipements de soudage et de coupage produisent des fumées et des gaz qui contiennent des produits chimiques dont l'État de Californie reconnaît qu'ils provoquent des malformations congénitales et, dans certains cas, des cancers. (Code de santé et de sécurité de Californie, chapitre 25249.5 et suivants) Ce produit contient des produits chimiques, notamment du plomb, dont l'État de Californie reconnaît qu'ils provoquent des cancers, des malformations congénitales ou d'autres problèmes de procréation. Se laver les mains après utilisation. Fsafe4 2013-10			

 Effective with serial no. LA135884 and following the SGA 100 and SGA 100C are not required for use with the Millermatic 185, Millermatic 210, and IronMan 210 models, and IronMan 250 models.

2. Weld Control Specifications

Specification	
Input Power	Single-Phase 115 Volts AC, .5 Amperes, 60 Hertz
Control Circuit Voltage Provided To Spool Gun	36 Volts DC
Welding Power Source Type	Constant Voltage (CV) DC, With or Without Contactor
Connections	Gun Trigger Controls, Gas And Weld Cables
Welding Process	DC Gas Metal Arc Welding (GMAW)
Input Power Cord With Plug	10 ft (3 m)
Overall Dimensions	SGA 100: 13 in. (330 mm) L x 8 in. (203 mm) W x 5 in. (127 mm) H SGA 100C: 13 in. (330 mm) L x 8 in. (203 mm) W x 9 in. (229 mm) H
Weight	SGA 100: 10 lb (4.5 kg); SGA 100 C: 13 lb (5.9 kg)

3. Duty Cycle



Maximum rating for the SGA 100 and SGA 100C is 150 amperes at a 60% duty cycle.

Duty Cycle is percentage of 10 minutes that unit can weld at rated load without overheating.

NOTICE – Exceeding duty cycle can damage unit and void warranty.

If you are connecting this spoolgun adapter to a unit with an output contactor, proceed to Section 4. If you are connecting this spoolgun adapter to a unit without an output contactor, proceed to Section 5.

4. Installing SGA 100 Spoolmate Adapter (Kit 043 856)

A. Making Connections To Units With An Output Contactor (Millermatic 185, Millermatic 210, And IronMan 210 Models, And IronMan 250 Models Effective With Serial No. LA135884 And Following Do Not Require This Accessory)

⚠ Drawing shows typical welding power source installation.

⚠ Loosen and raise drive tension arm on power source wire feeder, and turn off mild steel shielding gas supply when using spool gun.

ⓘ 100% argon shielding gas required for aluminum.

⚠ Turn Off and disconnect input power.

- 1 Spoolmate Spoolgun
- 2 SGA 100 Control Box
- 3 Welding Power Source With 1/2 in. (13 mm) Weld Cable Stud
- 4 1/2 in. (13 mm) Weld Cable Stud
- 5 Front Panel
- 6 Front Panel Opening
- 7 Spoolgun Weld Cable

Route Spoolgun weld cable through front panel opening and connect to 1/2 in. (13 mm) weld cable stud.

ⓘ If unit does not have a 1/2 in. (13 mm) weld cable stud, proceed to Section 3B.

8 Interconnecting Cord

Connect interconnecting cord as shown.

ⓘ A second interconnecting cord with female friction terminals on each end (not shown) is provided with this kit. If your unit requires this type of interconnecting cord for trigger operation, connect female friction terminals to matching male friction terminals on welding power source and SGA 100 control box. Polarity is not important.

Tools Needed:

3/4 in.

9 Spoolgun Gas Hose

Slide spoolgun gas hose onto barbed fitting on SGA 100 control box where shown.

10 Spoolgun Trigger Control Plug

Connect spoolgun trigger control plug to matching receptacle on SGA 100 control box where shown.

11 Gas Hose

Slide gas hose onto fitting on back of SGA 100 control box.

12 115 VAC Plug

Connect plug as shown.

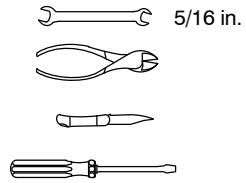
Ref. 802 181

B. Connecting Spoolmate Spoolgun Weld Cable To Units Without A 1/2 in. Weld Cable Stud



 Drawing shows typical welding power source installation.

Tools Needed:



- 1 Wire Drive Assembly
- 2 Gun Securing Bolt
- 3 Gun Securing Nut

Remove gun securing nut.

- 4 Terminal

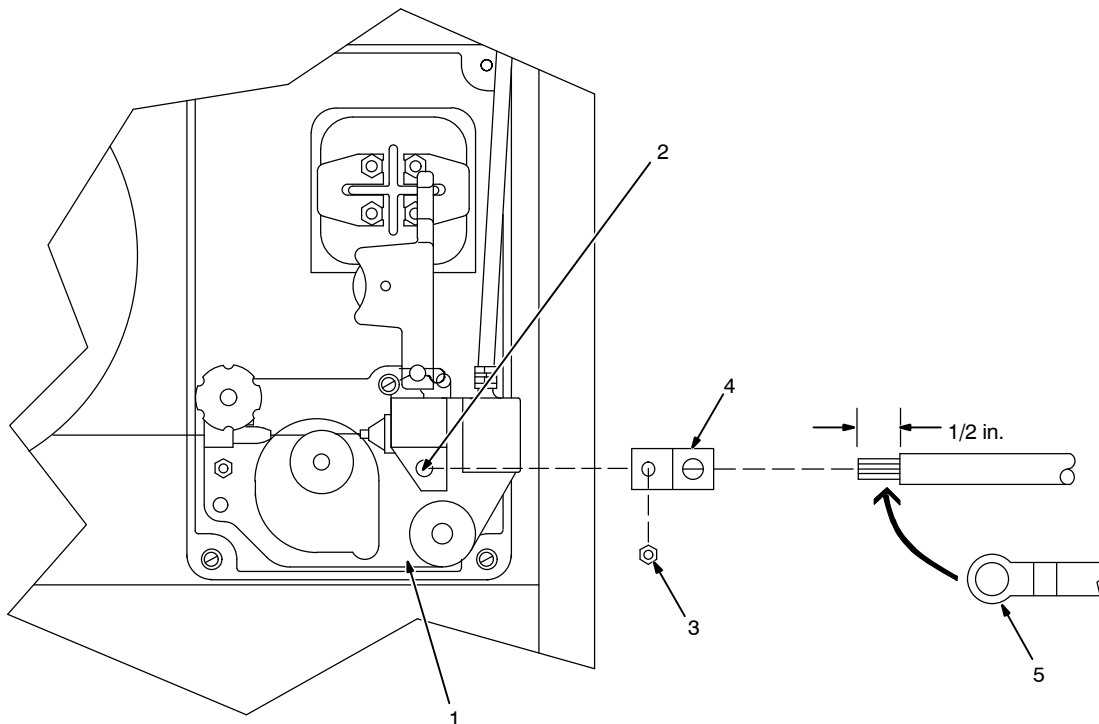
Slide terminal onto gun securing bolt and secure with gun securing nut.

- 5 Spoolgun Weld Cable Ring Terminal

Cut off ring terminal and strip insulation back 1/2 in. (13 mm).

Slide spoolgun weld cable into terminal 1/2 in. (13 mm). Tighten set-screw.

Go back to Section 3A, Item 8, to complete the installation.



5. Installing SGA 100C Spoolmate Adapter w/ Contactor (Kit 043 857)

A. Making Connections To Units Without An Output Contactor



 Drawing shows typical welding power source installation.

 **Turn Off and disconnect input power or shut off engine.**

- 1 Welding Generator
- 2 Weld Cable (Customer Supplied)
- 3 Spoolmate Spoolgun
- 4 Spoolgun Weld Cable
- 5 SGA 100C Control Box

Proceed to Section 4B

- 6 Spoolgun Gas Hose

Slide spoolgun gas hose onto barbed fitting on SGA 100C control box where shown.

- 7 Spoolgun Trigger Control Plug

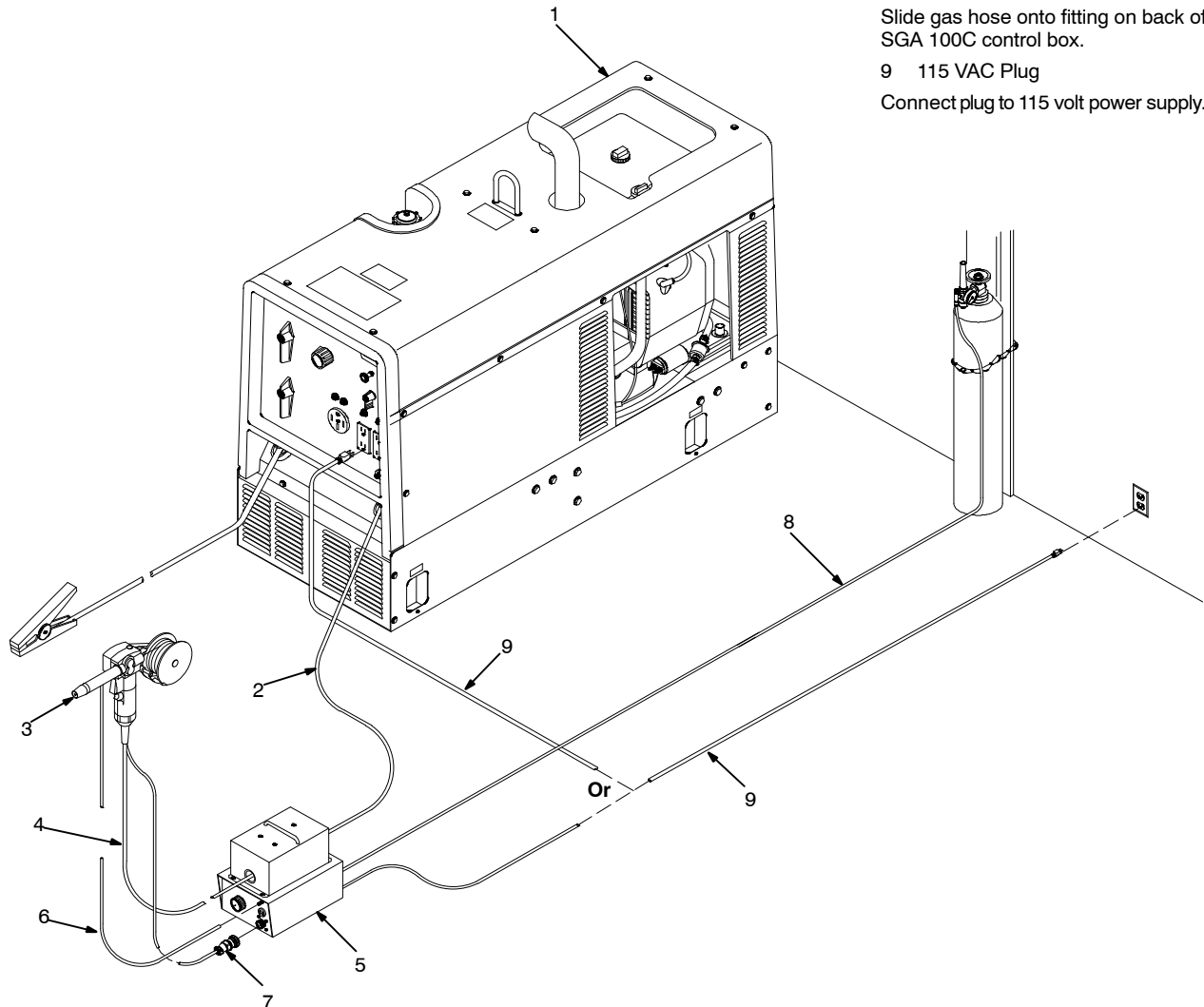
Connect spoolgun trigger control plug to matching receptacle on SGA 100C control box where shown.

- 8 Gas Hose

Slide gas hose onto fitting on back of SGA 100C control box.

- 9 115 VAC Plug

Connect plug to 115 volt power supply.



802 188

B. Making Connections In The Contactor Control Box

Tools Needed:

- 3/8 in. screwdriver
- 3/8 in. pliers
- 3/8 in. wire cutters

The SGA 100C can be used with MIG welding power sources by simply following the hookup procedure for an SGA 100.

- SGA 100C Control Box
- Contactor Box

Remove contactor box

- Contactor Control Leads
- Spoolgun Weld Cable Ring Terminal

Cut off ring terminal and strip insulation back 1/2 in. (13 mm).

- Terminals

Slide spoolgun weld cable into terminal 1/2 in. (13 mm). Tighten set-screw.

- Weld Cable

Strip insulation back 1/2 in. (13 mm).

Slide weld cable into terminal 1/2 in. (13 mm). Tighten set-screw.

Install contactor box back onto SGA 100C control box.

Go back to Section 4A, Item 6 to complete this installation.

Ref. 802 189-A

Model	Wire Size / Type	Metal Size	Wire Feed Speed Setting	Voltage %
SGA 100 w/3035 spool gun on Millermatic 135	.030 / 4043	14 ga aluminum	25 – 30	65 – 85
		1/8 in. aluminum	25 – 30	100
		3/16 in. aluminum	—	—
		1/4 in. aluminum	—	—
SGA 100 w/3035 spool gun on Millermatic 135	.035 / 4043	14 ga aluminum	25 – 30	80 – 100
		1/8 in. aluminum	25 – 30	100
		3/16 in. aluminum	—	—
		1/4 in. aluminum	—	—
SGA 100 w/3035 spool gun on Millermatic 175	.030 / 4043	14 ga aluminum	35 – 40	35 – 40
		1/8 in. aluminum	45 – 50	45 – 50
		3/16 in. aluminum	50 – 55	80 – 100
		1/4 in. aluminum	50 – 55	80 – 100
SGA 100 w/3035 spool gun on Millermatic 175	.035 / 4043	14 ga aluminum	28 – 32	35 – 40
		1/8 in. aluminum	38 – 42	45 – 50
		3/16 in. aluminum	40 – 45	100
		1/4 in. aluminum	40 – 45	100

These values are starting parameters only. When welding aluminum use 100% argon shielding gas, maintain a 1/2 to 3/4 in. tip to work distance, and a 10 to 15 degree push angle with the spool gun.

6. Electrical Diagram

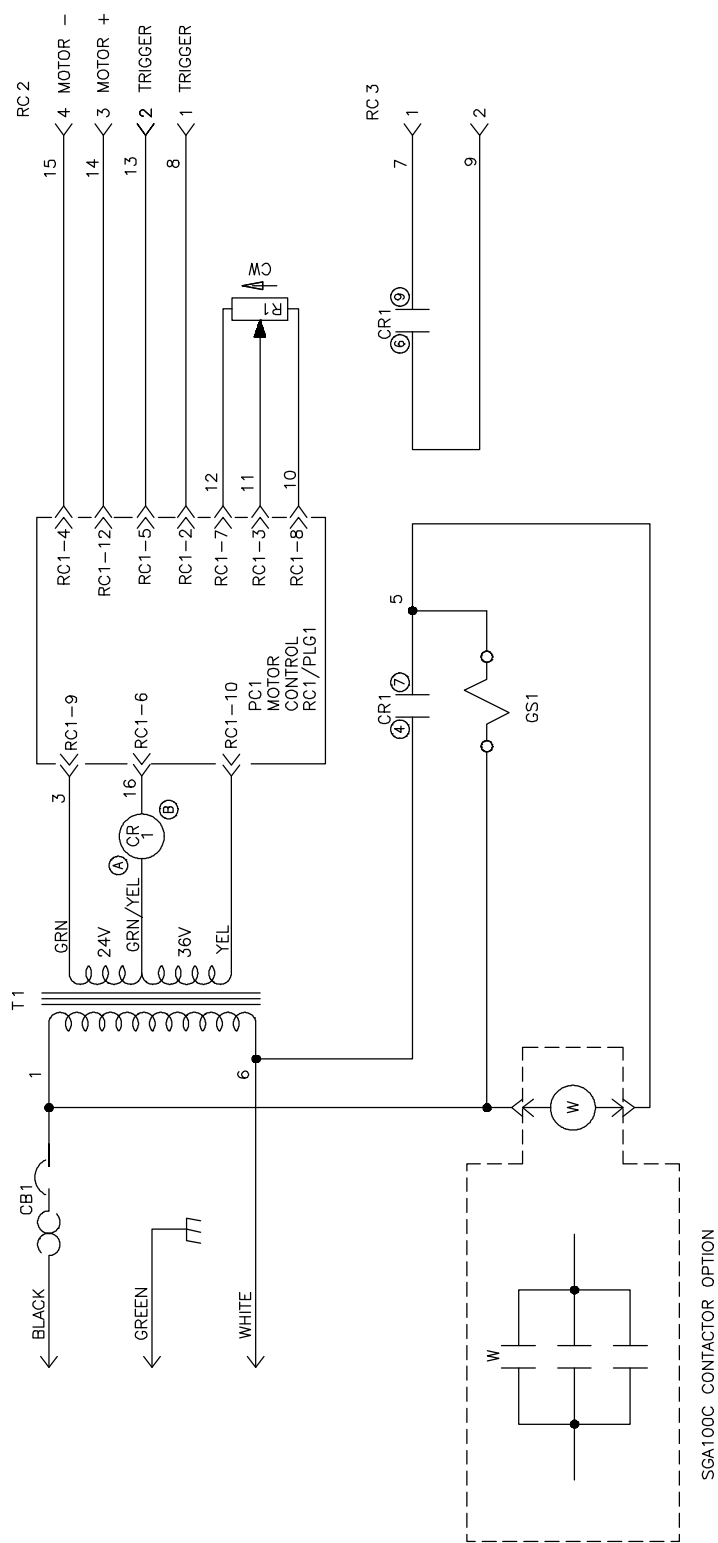
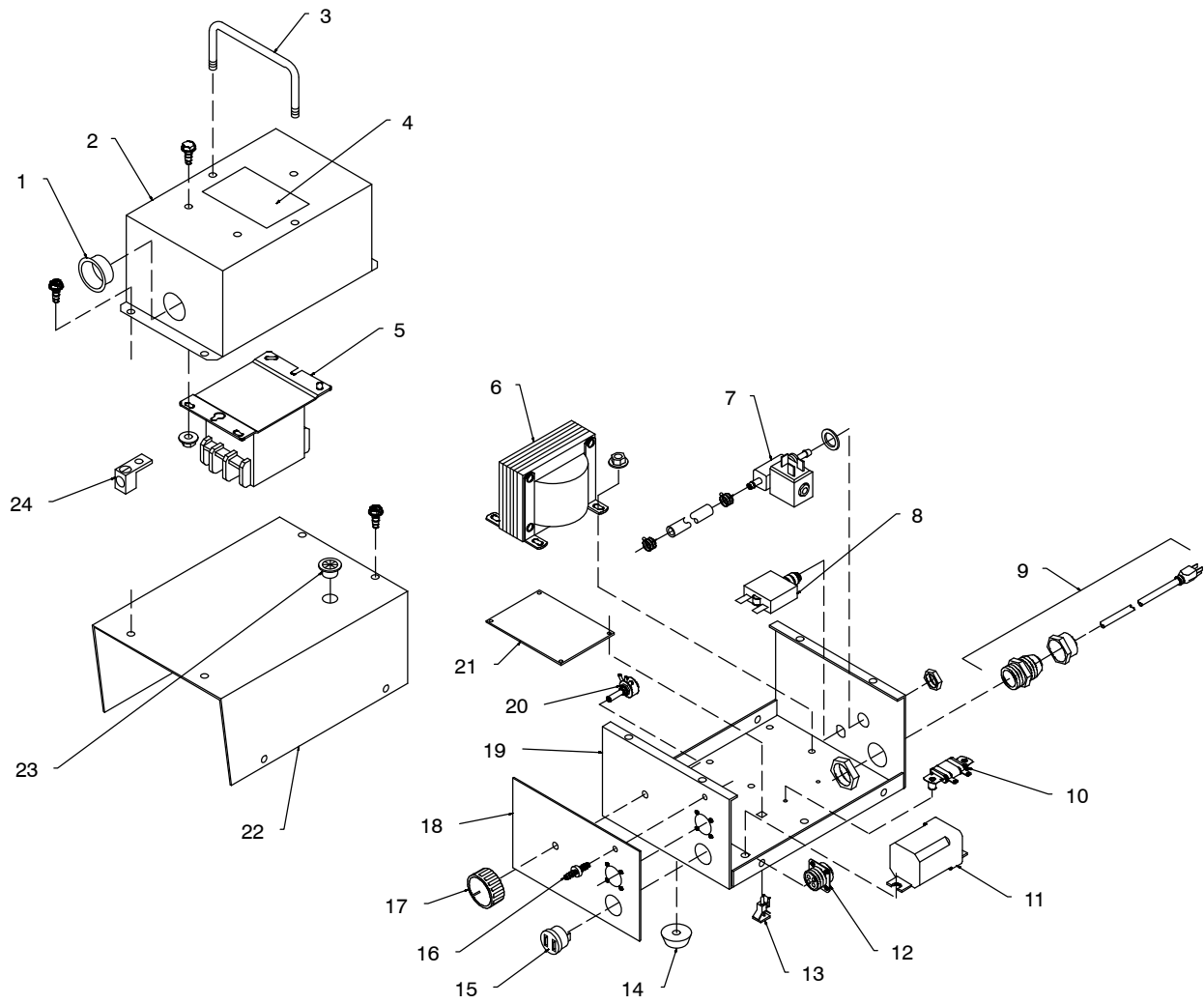


Figure 6-1. Circuit Diagram

206 578

7. Parts



802 302-A

Figure 7-1. Main Assembly

			Quantity	
			Kit	
Part No.	Dia. Mkgs.	Description	043856	043857
SGA 100 Spoolmate Adapter Kit 043 856 Or				
SGA 100C Spoolmate Adapter w/Contactor Kit 043 857				
1	057 357	Bushing, Snap-In Nyl .937 ID X 1.125 Mtg Hole		2
2	190 421	Cover, Ext Contactor		1
3	190 418	Handle		1
4	131 515	Label, Warning Electric Shock	1	1
5	252 907	W Contactor, def prp 60A 3P 120 VAC coil		1
6	206 951	T1 Xfmr, Control 115V pri 35V/24V sec	1	1
7	170 970	GS1 Valve, 115 VAC 2way 2 pipes 6mm 60 Hz	1	1
8	195 531	CB1 Circuit Breaker, Man Reset 1P 2.5A 250V	1	1
9	206 960	Cable, Power	1	1
10	114 050	R2 Resistor, ww fxd 10W 1K ohm	1	1
11	072 817	CR1 Relay, Encl 24 VAC DPDT 20A/120 VAC 8 pin fla	1	1
12	048 282	RC2 Receptacle w/skts	1	1
13	134 201	Stand-Off Support, Pc Card	4	4
14	191 345	Foot, Mtg Snap-In Vinyl	3	3
15	184 734	Bushing, Terminal 2 Position	1	1
16	172 171	Ftg, Hose Brs Barbed Coupler	1	1
17	097 924	Knob Pointer 1.625 dia	1	1
18	206 815	Nameplate	1	
18	206 816	Nameplate		1
19	206 949	Base	1	1
20	198 087	R1 Pot, Cp Std Slot 1T 2W 1K ohm	1	1
21	240 157	PC1 Circuit Card Assy, Motor	1	1
22	190 420	Wrapper	1	1
23	025 338	Bushing, Nyl Univ 23/32 hd dia .625 mtg hole		1
23	024 376	Blank, Snap-In Nyl	1	
24	191 103	Lug, Univ W/Scr 600V	1	2
	190 681	Cable, Interconnecting 6 ft Trigger Fric To Fric	1	1
	190 682	Cable, Interconnecting 6 ft Trigger (amp) 4 Pin To Fric	1	1
	269 815	Hose, Gas	1	1

