





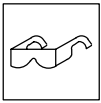
Owner's Manual SGA 100 And SGA 100C

October 2001

FORM: OM-190 753H

Use above FORM number when ordering extra manuals.

1. Safety Symbol Definitions

	Warning! Watch Out! There are possible hazards as shown in the adjoining symbols.		Have only trained and qualified persons install, operate, or service this unit. Call your distributor if you do not understand the directions. For WELDING SAFETY and EMF information, read welding power source Owner's Manual.
	Beware of electric shock from wiring. Turn Off welding power source and disconnect power before installing this kit. Reinstall all panels and covers.		Hot parts can cause burns. Welding makes parts very hot – let them cool before touching.
	Wear safety glasses with side shields.		

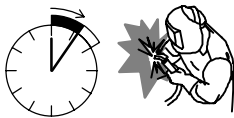


NOTE

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 effective with serial no. LA135884 and following).

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


 <p>6 Minutes Welding</p>		 <p>4 Minutes Resting</p>	<p>Maximum rating for the SGA 100 and SGA 100C is 150 amperes at a 60% duty cycle.</p> <p>Duty Cycle is percentage of 10 minutes that unit can weld at rated load without overheating.</p>
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NOTE

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)

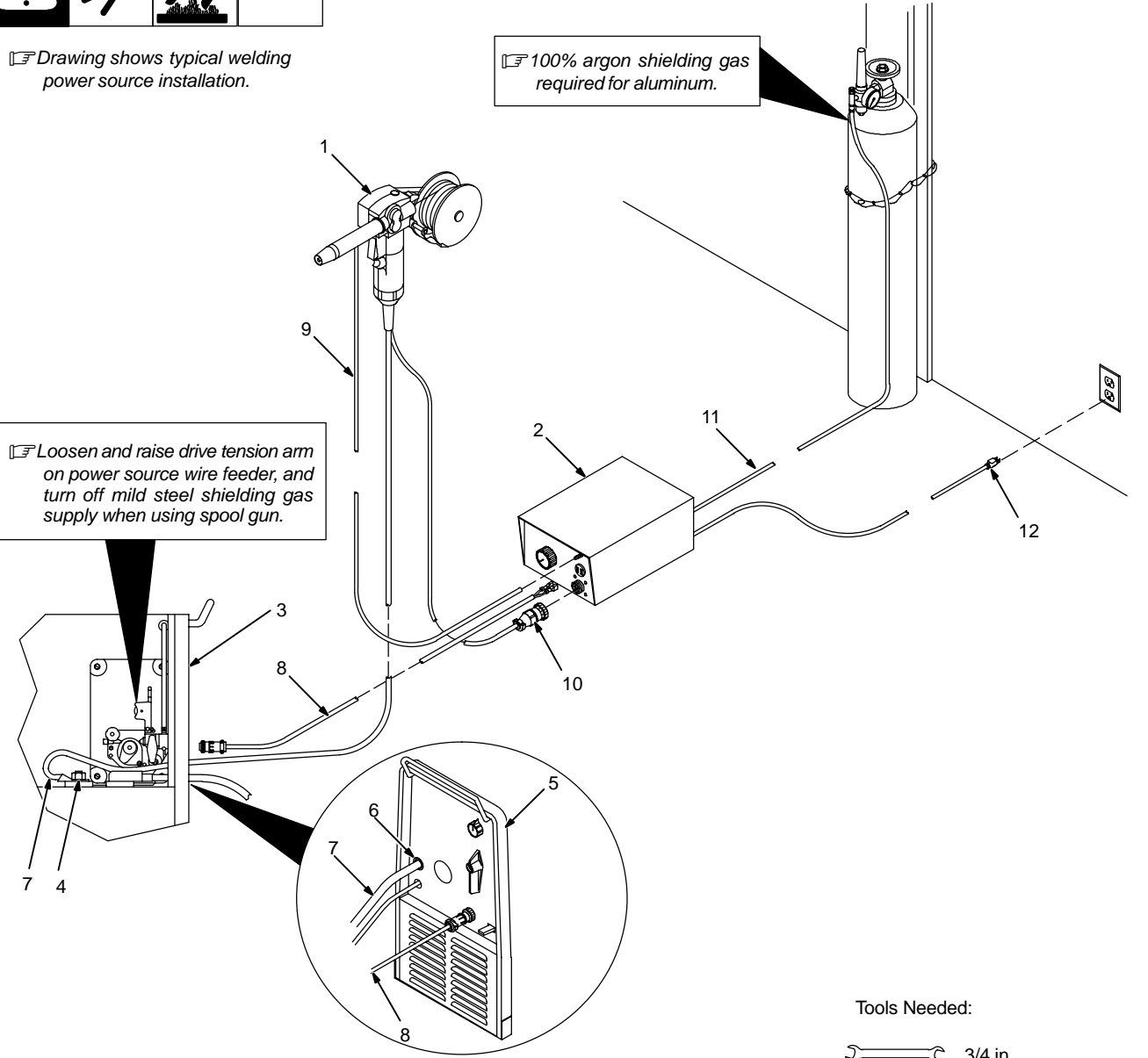
A. Making Connections To Units With An Output Contactor (Millermatic 185, Millermatic 210, And IronMan 210 Models, And IronMan 250 Models Effective With Serial No. LA135884 And Following Do Not Require This Accessory)



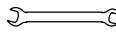
⚠ Drawing shows typical welding power source installation.

⚠ 100% argon shielding gas required for aluminum.

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



Tools Needed:

 3/4 in

▲ 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. **NOTE:** 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. **NOTE:** 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.

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.

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

Remove gun securing nut.

- 4 Terminal

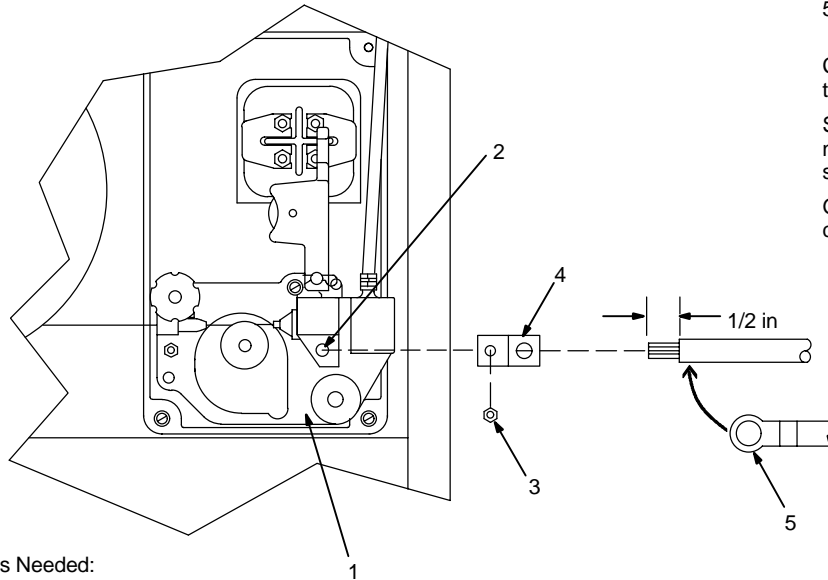
Slide terminal onto gun securing bolt and secure with gun securing nut.

- 5 Spoolgun Weld Cable Ring Terminal

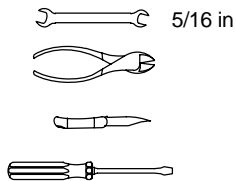
Cut off ring terminal and strip insulation back 1/2 in (13 mm).

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.



Tools Needed:




Ref. 802 181

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

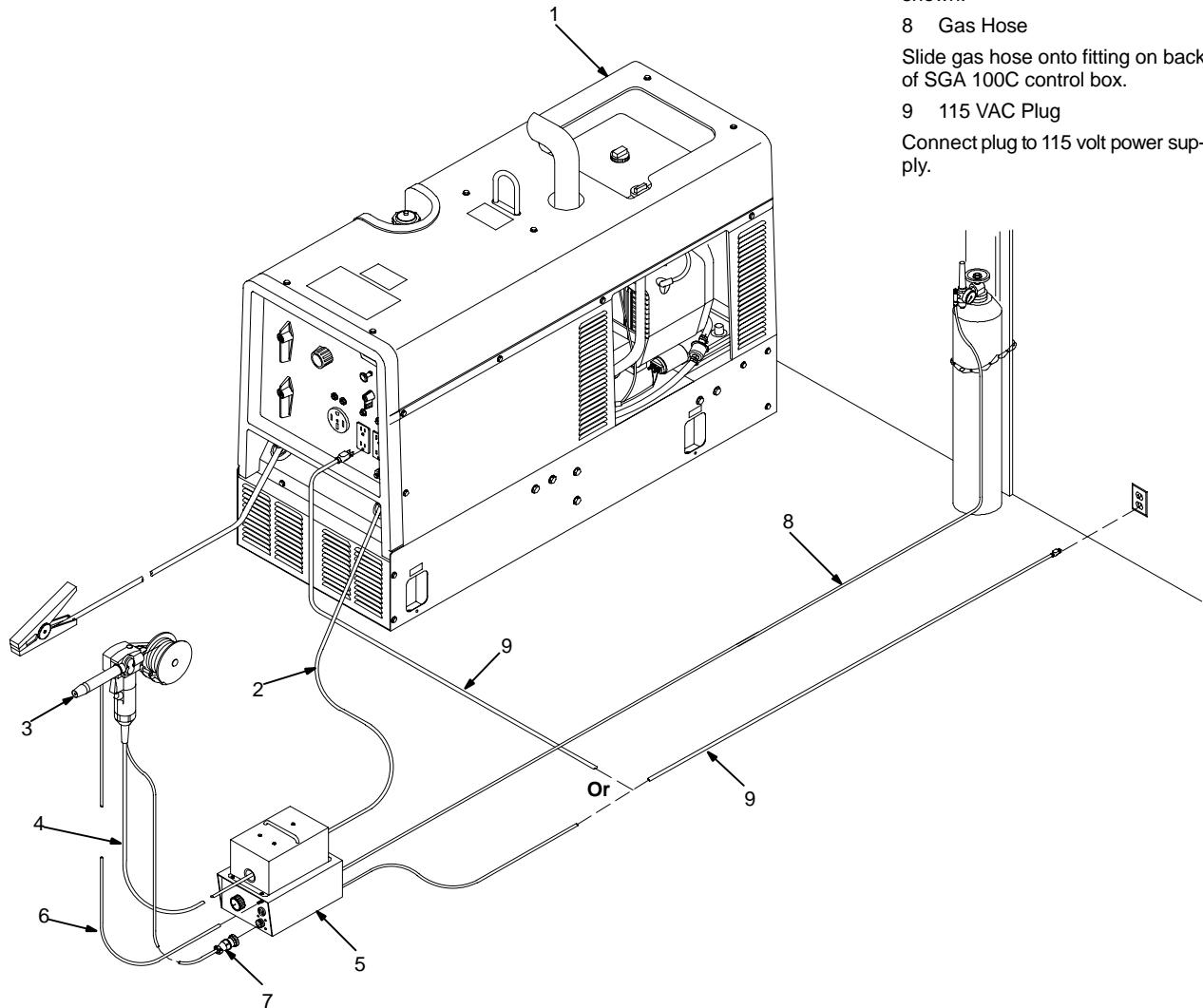
Connect spoolgun trigger control plug to matching receptacle on SGA 100C control box where shown.

- 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.

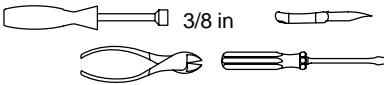



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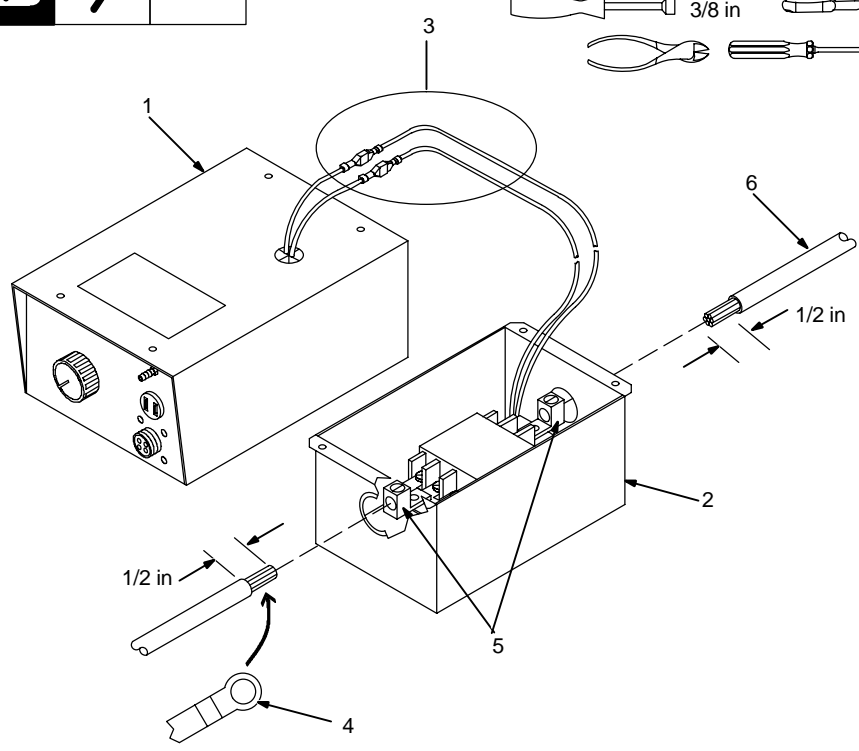
B. Making Connections In The Contactor Control Box



Tools Needed:



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



- 1 SGA 100C Control Box
- 2 Contactor Box

Remove contactor box

- 3 Contactor Control Leads
- 4 Spoolgun Weld Cable Ring Terminal

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

- 5 Terminals

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

- 6 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.

7. Parts

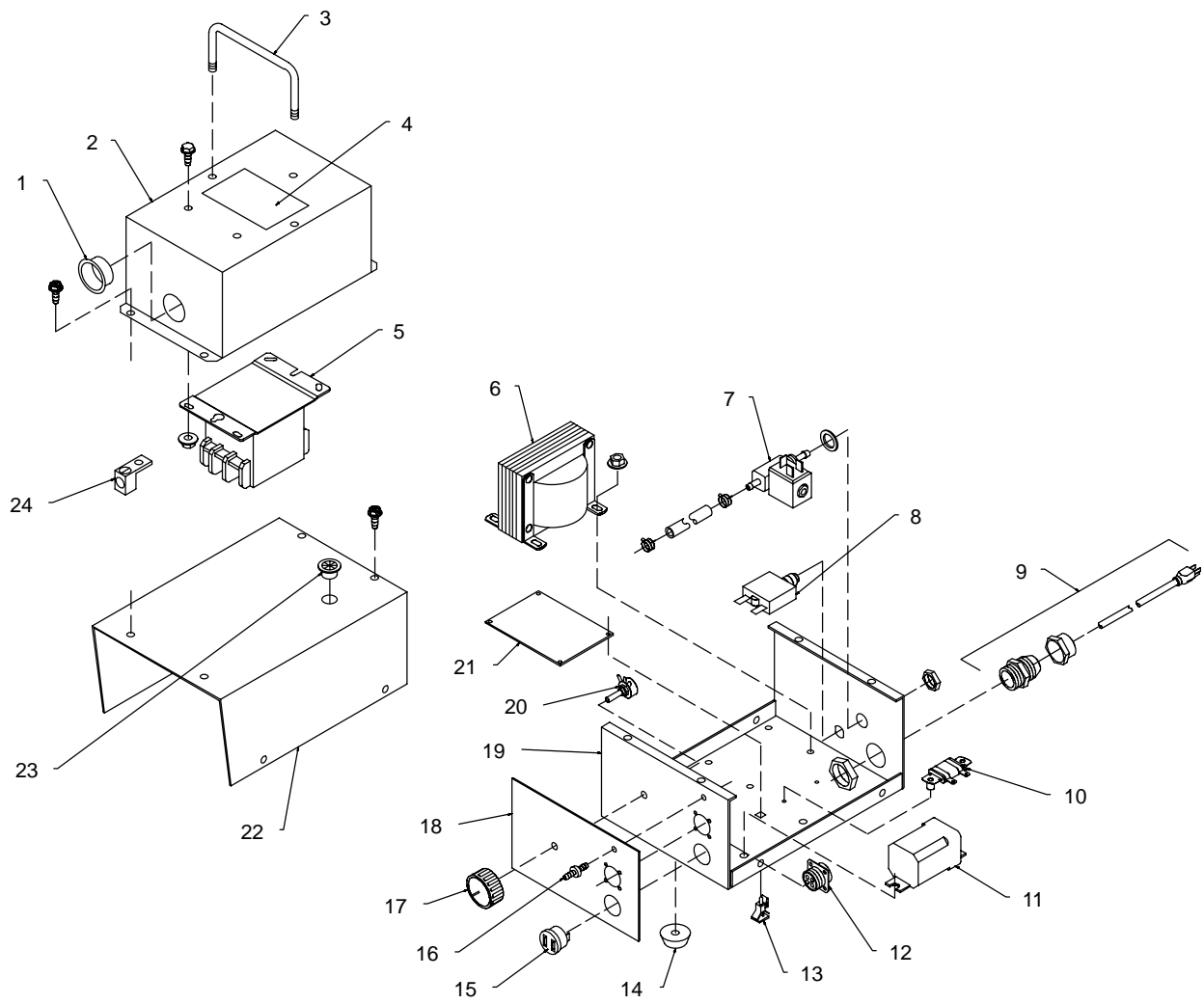


Figure 7-1. Main Assembly

802 302-A

Quantity

Kit

043856

043857

Part
No.

Description

**SGA 100 Spoolmate Adapter Kit 043 856 Or
SGA 100C Spoolmate Adapter w/Contactor Kit 043 857**

Part No.	Description	043856	043857
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	190 525 W CONTACTOR, def prp 40A 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 POTENTIOMETER, cp std slot 1T 2W 1K linear	1	1
21	206 582 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
	183 581 HOSE, gas	1	1

