OWNER'S MANUAL

OM-628

174 791M

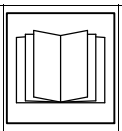
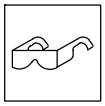
2011–01

CE And Non-CE Models

ENGLISH

Coolmate™ 3

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 on l'évite pas peut donner la mort ou des blessures graves. Les dangers possibles sont montrés par les symboles joints ou sont expliqués dans le texte.		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 wire feeder and welding power source manuals. L'installation, l'exploitation et l'entretien de cet appareil doivent être confiés uniquement à des personnes qualifiées et convenablement formées. S'adresser à un distributeur si l'on ne comprend pas les directives. Pour des renseignements ayant trait à la SÉCURITÉ lors du soudage et aux champs électromagnétiques, consulter les manuels traitant les dévidoirs et les sources de courant pour le soudage.
	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 on l'évite pas peut donner la mort ou des blessures graves. Les dangers possibles sont montrés par les symboles joints ou sont expliqués dans le texte.		Beware of moving parts. Attention! Pièces en mouvement.
NOTICE 	Indicates statements not related to personal injury. Indique des déclarations pas en relation avec des blessures personnelles. Indicates special instructions. Indique des instructions spécifiques.		Wear safety glasses with side shields. Porter des lunettes de sécurité avec protections latérales.
	Beware of electric shock from wiring. Attention! Risque d'électrocution due au contact avec des fils.		Recycle or dispose of used coolant in an environmentally safe way. Recycler ou éliminer tout liquide de refroidissement usé conformément aux méthodes prescrites pour assurer la protection de l'environnement.

CALIFORNIA 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 et 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.*

Avertissements issus de la «Proposition 65»

Les équipements de soudage ou de coupe produisent des émanations ou des gaz qui contiennent des agents chimiques réputés selon l'État de Californie causer des déficiences congénitales et, dans certains cas, le cancer. (Section 25249.5 et suivantes du «California Health & Safety Code»)

Ce produit contient des agents chimiques, notamment du plomb, réputés selon l'État de Californie causer des cancers, des malformations congénitales ou d'autres problèmes de procréation. *Se laver les mains après utilisation.*

2. EMF Information

Electric current flowing through any conductor causes localized electric and magnetic fields (EMF). Welding current creates an EMF field around the welding circuit and welding equipment. EMF fields may interfere with some medical implants, e.g. pacemakers. Protective measures for persons wearing medical implants have to be taken. For example, access restrictions for passers–by or individual risk assessment for welders. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

1. Keep cables close together by twisting or taping them, or using a cable cover.
2. Do not place your body between welding cables. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.
4. Keep head and trunk as far away from the equipment in the welding circuit as possible.
5. Connect work clamp to workpiece as close to the weld as possible.
6. Do not work next to, sit or lean on the welding power source.
7. Do not weld whilst carrying the welding power source or wire feeder.

About Implanted Medical Devices:

Implanted Medical Device wearers should consult their doctor and the device manufacturer before performing or going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations. If cleared by your doctor, then following the above procedures is recommended.

3. Important Information Regarding CE Products (Sold Within The EU)

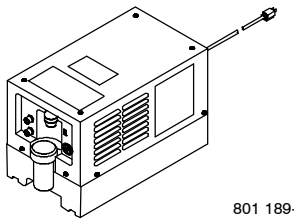
This equipment shall not be used by the general public as the EMF limits for the general public might be exceeded during welding.

This equipment is built in accordance with EN 60974−1 and is intended to be used only in an occupational environment (where the general public access is prohibited or regulated in such a way as to be similar to occupational use) by an expert or an instructed person.

Wire feeders and ancillary equipment (such as torches, liquid cooling systems and arc striking and stabilizing devices) as part of the welding circuit may not be a major contributor to the EMF. See the Owner's Manuals for all components of the welding circuit for additional EMF exposure information.

- The EMF assessment on this equipment was conducted at 0.5 meter.
- At a distance of 1 meter the EMF exposure values were less than 20% of the permissible values.

4. Specifications



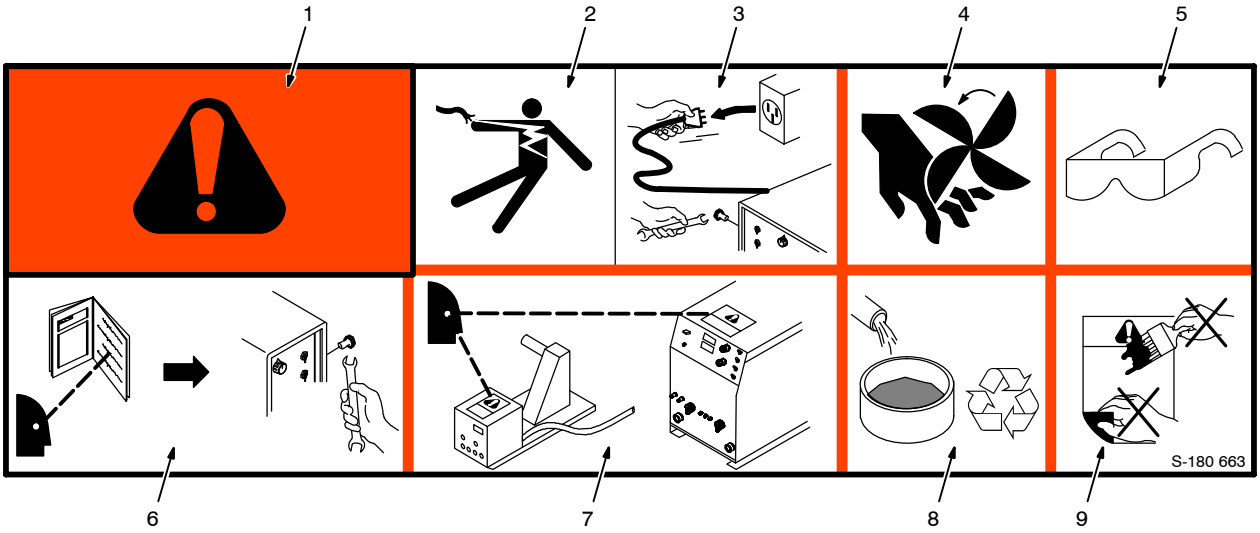
801 189-A

Recirculating Coolant System For Water-Cooled GTAW Torches And GMAW Guns
Use With Guns/Torches Rated Up To 600 Amperes
IP Rating: 23 − Not Intended For Use In Heavy Rain, Or Near Splashing Water
3 gal (11.4 L) Coolant Tank Capacity; Maximum Cooling Capacity: 3,820 W (13,000 BTU/hr) @ 4.2 qt/min (4.0 L/min)
IEC Cooling Capacity: 1,420 W (4,840 BTU/hr) @ 1.1 qt/min (1 L/min) IEC Cooling Capacity States That The Water Inlet Temperature Can Not Exceed 40° C Above Ambient Temperature At A 1l/ Min Flow Rate. Ratings Developed At An Ambient Temperature Of 68°F to 77° F (20°C To 25° C). Operating Temperature Is 14° F To 104° F (−10° C To 40° C)
Dimensions: 23 in. (584 mm) Long, 12 in. (305 mm) Wide, 13-1/4 in. (337 mm) High Weight: 39 lb (18 kg)
115 Volt Models Use 5.9 Amperes, 50/60 Hertz, Single-Phase Input Power 230 Volt Models Use 3 Amperes, 50/60 Hertz, Single-Phase Input Power

5. Serial Number And Rating Label Location

The serial number and rating information for this product is located on the back panel. Use rating label to determine input power requirements and/or rated output. For future reference, write serial number in space provided on cover of this manual.

6. Warning Label Definitions For CE Products



1 Warning! Watch Out! There are possible hazards as shown by the symbols.

2 Electric shock from wiring can kill.

3 Disconnect input plug or power before working on machine.

4 Moving parts, such as fans, can cut fingers and hands and cause injury. Keep away from moving parts.

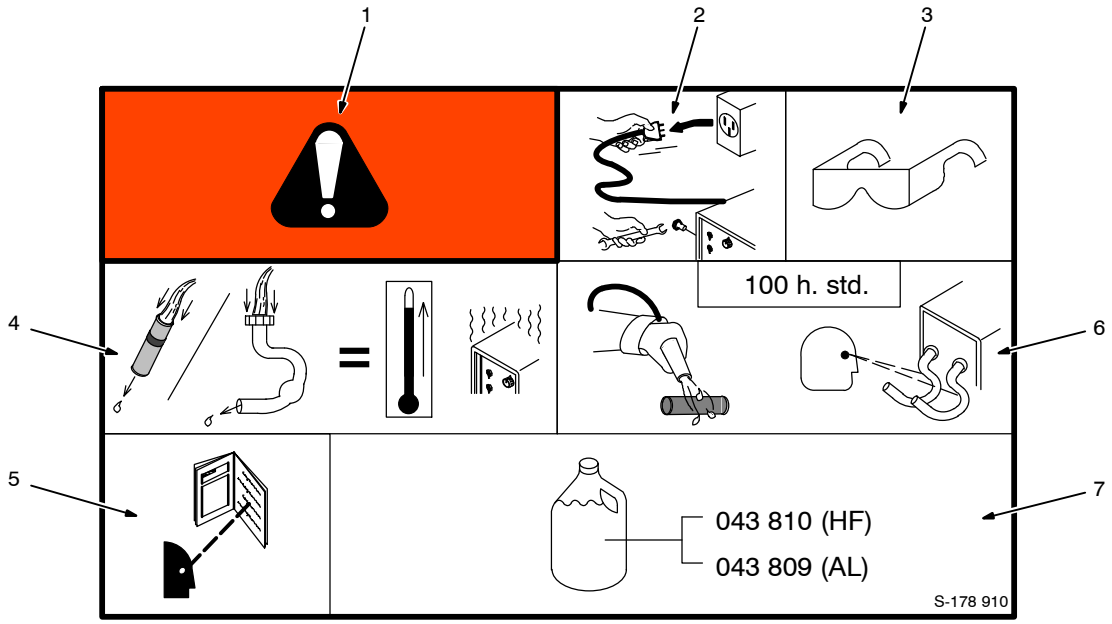
5 Wear safety glasses with side shields.

6 Read the Owner's Manual before working on this machine.

7 Read the labels on the welding power source, wire feeder, or other major equipment for welding safety information.

8 Recycle or dispose of used coolant in an environmentally safe way.

9 Do not remove or paint over (cover) the label.



1 Warning! Watch Out! There are possible hazards as shown by the symbols.

2 Disconnect input plug or power before working on machine.

3 Wear safety glasses with side shields.

4 Plugged filter or hoses cause overheating and damage.

5 Read Owner's Manual.

6 Check and clean filter every 100 hours; also check condition of hoses.

7 Use Low Conductivity Coolant No. 043 810 for High-Frequency assisted or Gas Tungsten Arc Welding applications. Use Aluminum Protecting Coolant No. 043 809 where coolant contacts aluminum parts or for Gas Metal Arc Welding applications or where High Frequency is not used.

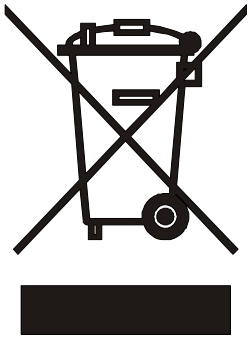
4/96

7. Symbols And Definitions

☞ *Some symbols are found only on CE products.*

A	Amperes	~	Alternating Current	→V	Voltage Input		Circulating Unit With Coolant Pump
V	Volts		Water (Coolant) Input		Water (Coolant) Output		Line Connection
	Protective Earth (Ground)	IP	Degree Of Protection	I_1	Primary Current	Hz	Hertz
I	On	O	Off	U_1	Primary Voltage	1~	Single Phase

8. WEEE Label (For Products Sold Within The EU)

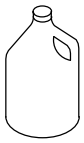


Do not discard product (where applicable) with general waste.

Reuse or recycle Waste Electrical and Electronic Equipment (WEEE) by disposing at a designated collection facility.

Contact your local recycling office or your local distributor for further information.

9. Coolant Chart

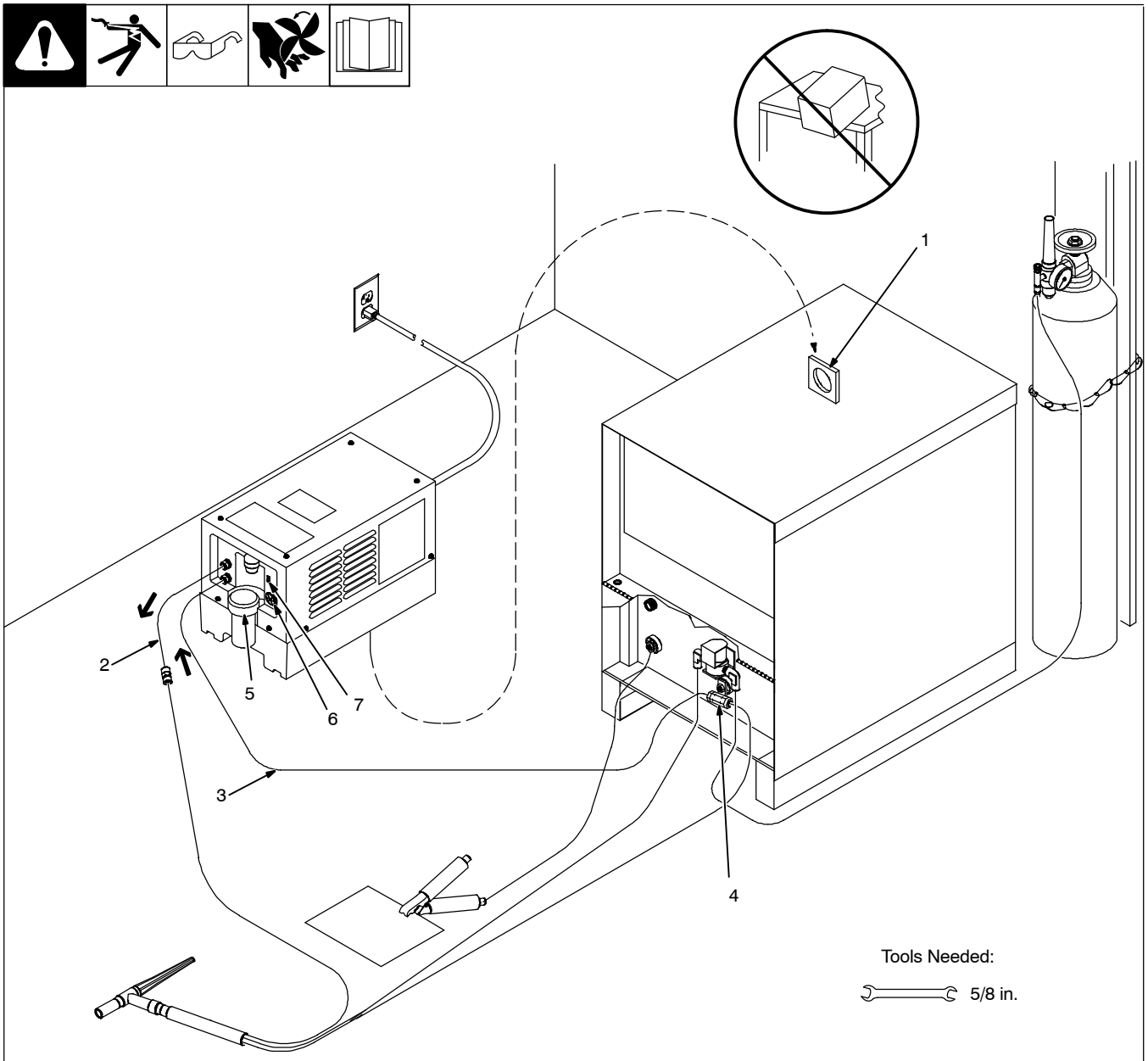
Application	GTAW Or Where HF* Is Used	GMAW Or Where HF* Is Not Used	Where Coolant Contacts Aluminum Parts
 Coolant	Low Conductivity Coolant No. 043 810**; Distilled Or Deionized Water OK Above 32° F (0° C)	Low Conductivity Coolant No. 043 810**; Or Aluminum Protecting Coolant No. 043 809**; Distilled Or Deionized Water OK Above 32° F (0° C)	Aluminum Protecting Coolant No. 043 809**

*HF: High Frequency Current

**Coolants 043 810 and 043 809 protect to -37° F (-38°C) and resist algae growth.

NOTICE *– Use of any coolant other than those listed in the table voids the warranty on any parts that come in contact with the coolant (pump, radiator, etc.).*

10. GTAW Connections



Tools Needed:

5/8 in.

801 190-B

Do not move or operate unit where it could tip.

1 Lift -Eye

If placing cooling unit on welding power source, slots are provided in bottom of unit so it fits over lift-eye.

To prevent overheating, make sure cooling unit is positioned so airflow is not restricted.

NOTICE – *If welding power source has a water valve, do not connect hoses to water valve. Connect hoses as shown.*

2 Coolant Out Hose

3 Coolant In Hose

Fittings have 5/8-18 left-hand threads. Connect hoses with proper fittings as shown.

4 TIG Block

Customer supplied for use with some welding power sources, or use proper connector supplied with welding power source.

5 Coolant Tank Cap

Use table in Section 9 to select proper coolant, and fill tank. Maintain coolant level at approximately 1 in (25 mm) below top of filler neck.

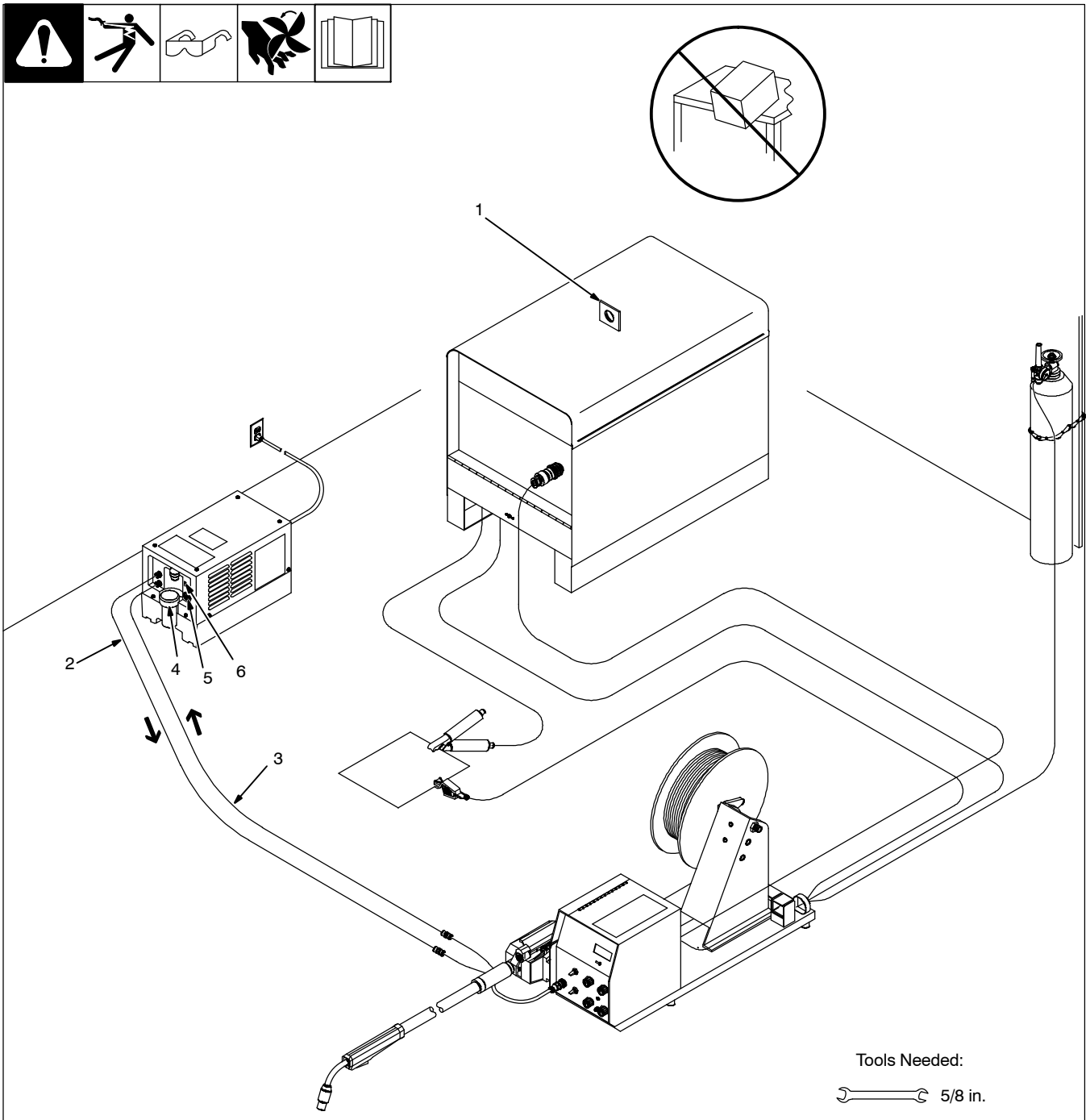
6 Flow Indicator

7 Power Switch

Operation:

Turn power switch On. Flow indicator spins to indicate that at least 0.53 qt/min (0.5 L/min) of coolant is flowing.

11. GMAW Connections



Do not move or operate unit where it could tip.

1 Lift -Eye

If placing cooling unit on welding power source, slots are provided in bottom of unit so it fits over lift-eye.

To prevent overheating, make sure cooling unit is positioned so airflow is not restricted.

NOTICE – *If welding power source has a water valve, do not connect hoses to water valve. Connect hoses as shown.*

2 Coolant Out Hose

3 Coolant In Hose

Fittings have 5/8-18 left-hand threads. Connect hoses with proper fittings as shown.

4 Coolant Tank Cap

Use table in Section 9 to select proper coolant, and fill tank. Maintain coolant level at approximately 1 in (25 mm) below top of filler neck.

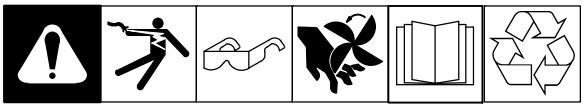
5 Flow Indicator

6 Power Switch

Operation:

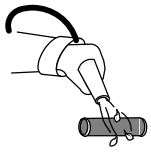
Turn power switch On. Flow indicator spins to indicate that at least 0.53 qt/min (0.5 L/min) of coolant is flowing.

12. Routine Maintenance

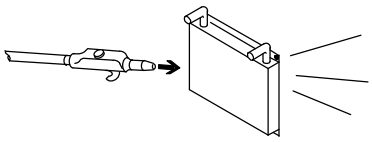


Disconnect power before maintaining.

3 Months

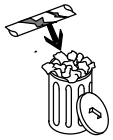


NOTICE *– Clean coolant strainer. Severe conditions may require more frequent cleaning (continuous use, high/low temperatures, dirty environment, etc.). Failure to properly clean coolant strainer voids pump warranty.*

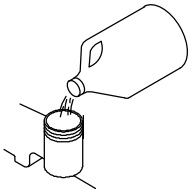


Blow Out Heat Exchanger Fins

6 Months



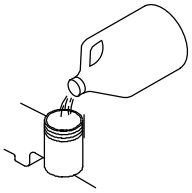
Replace Cracked Hoses



Change Coolant (If Using Water)

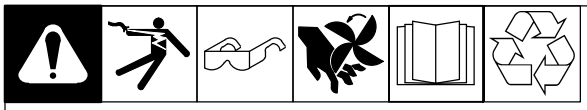
Replace Unreadable Labels

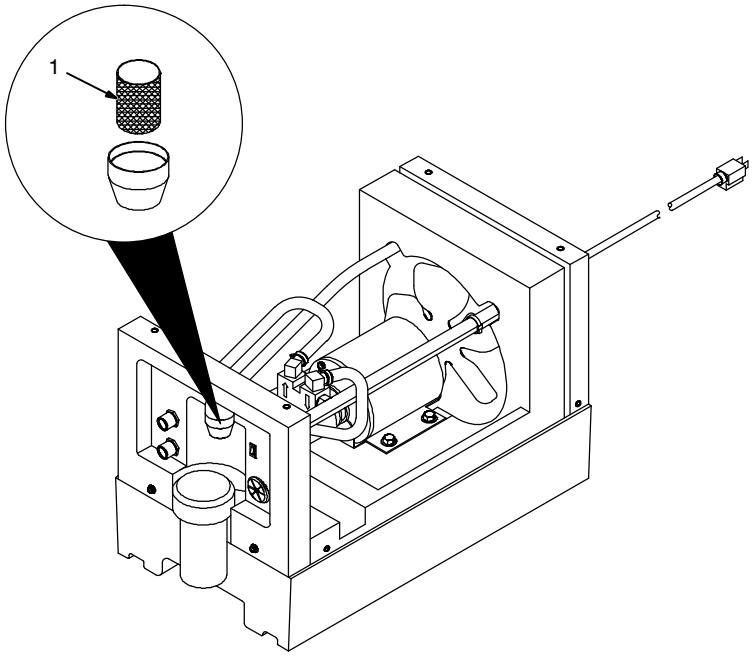
12 Months



Change Coolant (If Using 043 809 or 043 810 Coolant)

13. Coolant Maintenance





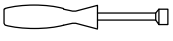
1 Coolant Filter

Unscrew housing to clean filter.

Changing coolant: Drain coolant by tipping unit forward. Fill with clean water and run for 10 minutes. Drain and refill.

☞ *If replacing hoses, use hoses compatible with ethylene glycol, such as Buna-n, Neoprene, or Hypalon. NOTE: Oxy-acetylene hoses are not compatible with any product containing ethylene glycol.*

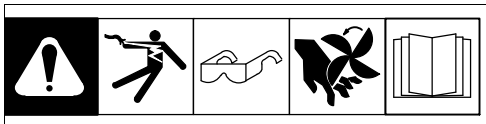
Tools Needed:



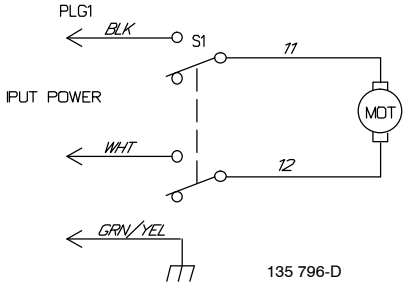
3/8 in.

801 195-B / Ref. 801 194

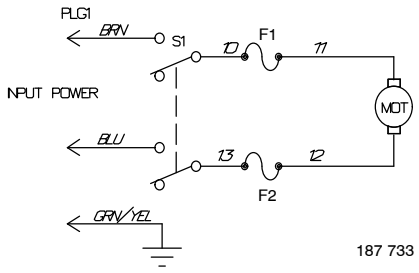
14. Troubleshooting



Trouble	Remedy
Coolant system does not work.	Be sure input power cord is plugged in to energized receptacle.
	Check line fuses or circuit breaker, and fuses F1, F2 if applicable, and replace or reset if necessary.
	Motor overheated. Unit starts running when motor has cooled.
	Have Factory Authorized Service Agent check Power switch S1 and motor Mot.
Decreased or no coolant flow.	Add coolant.
	Check for clogged hoses or coolant filter. Clean filter or clean / replace hoses if necessary.
	Disconnect pump, and check for sheared coupling. Replace coupling if necessary.



Circuit Diagram For 115 And 230 Volt



Circuit Diagram For 230 Volt (CE Models)

15. Parts List

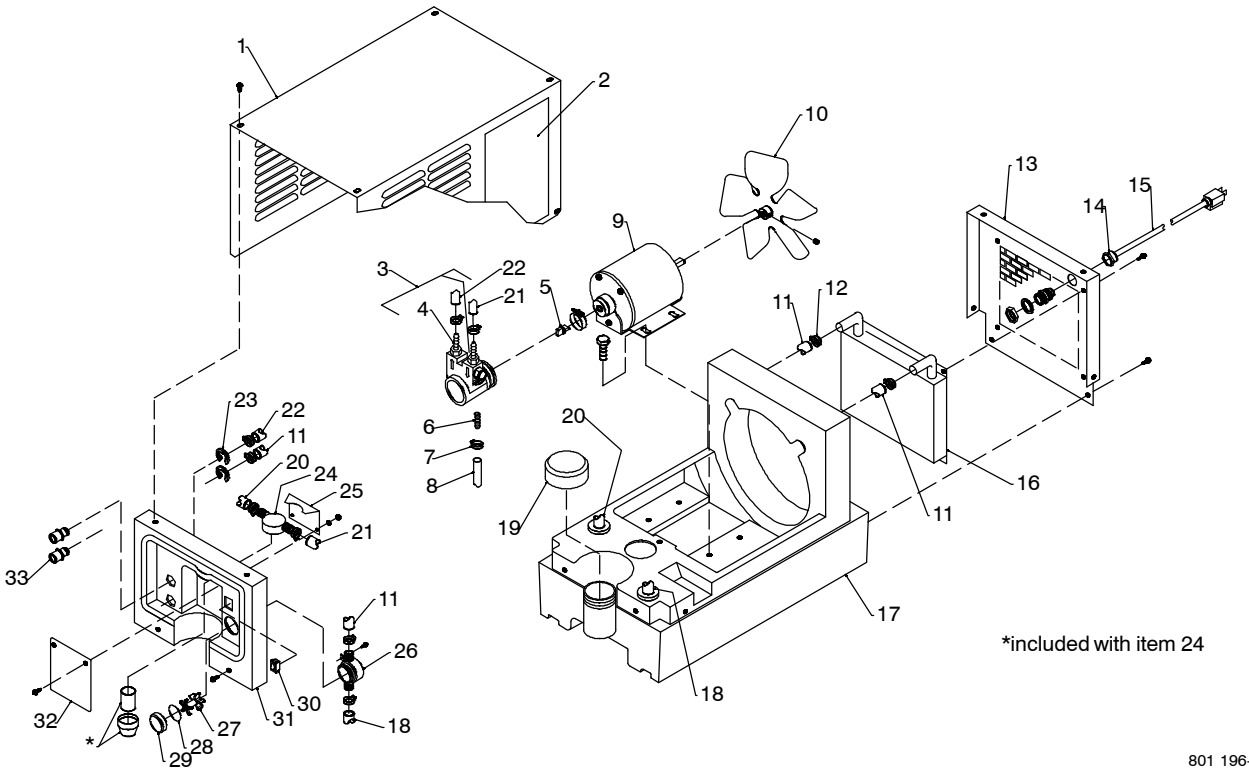


Figure 15-1. Complete Assembly

Item No.	Dia. Mkgs.	Part No.	Description	Quantity Model 043 007 115 Volt	Quantity Model 043 008 230 Volt
1		+166 562	WRAPPER	1	1
2		192 449	LABEL, warning general precautionary	1	1
3		197 361	PUMP COOLANT w/V–BAND, (includes)	1	1
4		126 978	FITTING, hose brs barbed M 3/8tbg x 3/8	2	2
5		134 795	COUPLER, drive pump	1	1
6		196 990	FITTING, hose brs barbed	1	1
7		089 120	CLAMP, hose .375 – .450 clip	1	1
8		196 991	HOSE, nprn brd no 1 x .250ID	1	1
9	MOT	173 264	MOTOR, 1/4hp 230VAC 50/60Hz 1425/1725rpm (230V model)		1
9	MOT	173 263	MOTOR, 1/4hp 115VAC 50/60Hz 1425/1725rpm (115V model)	1	
10		166 570	BLADE, fan 9.000 5wg 38deg .500 bore cw (setscrew included)	1	1
11		174 044	TUBING, PVC .375 x .625 OD X 18.000	2	2
12		*010 323	CLAMP, Hose .250 - .625 Clp Dia		
13		192 454	PANEL, rear	1	1
14		139 042	BUSHING, strain relief .270/.480 id x .804 mtg hol	1	1
15	PLG1	192 458	CABLE, power 11FT 16ga 3c (230V model)		1
15	PLG1	192 457	CABLE, power 10ft 16ga (115V model)	1	
15	PLG1	192 456	CABLE, pwr 10ft (230V CE Models)		1
16		196 515	RADIATOR, heat exchanger	1	1
17		168 267	TANK COOLANT	1	1
18		174 043	TUBING, PVC .375 ID x .625 OD x 1.250	1	1
19		166 608	CAP, tank screw-on w/vent	1	1
20		182 994	TUBE, pick-up coolant	1	1
21		136 369	TUBING, PVC .375 ID x .625 OD x 10.000	1	1
22		136 731	HOSE, nprn brd No. 1 x .375 ID x 10.50 black	1	1
23		166 560	RING, ring ext .500 shaft grv x .042thk	2	2
24		166 564	FILTER, in-line	1	1

Figure 15-1Complete Assembly.

Item No.	Dia. Mkgs.	Part No.	Description	Quantity Model 043 007 115 Volt	Quantity Model 043 008 230 Volt
25		168 254	CLIP, filter mounting	1	1
	F1, F2	011 116	FUSE, mintr gl slo-blo 7A 250V (230V CE Models only)		2
		098 376	HOLDER, fuse mintr (230V CE Models only)		1
		215 279	INDICATOR, flow (includes)	1	1
26			HOUSING, flow indicator	1	1
27			PADDLE, flow indicator	1	1
28		166 566	O-RING, 1.301 ID x .070CS (may be bought separately)	1	1
29			LENS, flow indicator	1	1
30	S1	177 396	SWITCH, rocker DPST 15A 250VAC	1	1
31		177 399	PANEL, front	1	1
32			NAMEPLATE, (order by model and serial number)	1	1
33		166 571	FITTING, coolant barbed 3/8tbg 5/8-18 female	2	2

Figure 15-1Complete Assembly (continued).

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

*Hose clamps (2 per hose) should be ordered for any hose removal or repair.

BE SURE TO PROVIDE MODEL AND SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS.

DECLARATION OF CONFORMITY

for European Community (CE marked) products.

MILLER Electric Mfg. Co., 1635 Spencer Street, Appleton, WI 54914 U.S.A. declares that the product(s) identified in this declaration conform to the essential requirements and provisions of the stated Council Directive(s) and Standard(s).

Product/Apparatus Identification:

Product	Stock Number
COOLMATE 3 115V W/CE COMPLIANCE	**043007012**
COOLMATE 3 230V W/CE COMPLIANCE	**043008012**

Council Directives:

- 2006/95/EC Low Voltage
- 2004/108/EC Electromagnetic Compatibility

Standards:

- IEC 60974-1:2005 Arc welding equipment – Part 1: Welding power sources
- IEC 60974-2:2007 Arc welding equipment – Part 2: Liquid cooling systems
- IEC 60974-10:2007 Arc Welding Equipment – Part 10: Electromagnetic compatibility (EMC) requirements
- EN 50445:2008 Product family standard to demonstrate compliance of equipment for resistance welding, arc welding and allied processes with the basic restrictions related to human exposure to electromagnetic fields (0 Hz – 300Hz)

Signatory:

January 27, 2011

David A. Werba

MANAGER, PRODUCT DESIGN COMPLIANCE

Date of Declaration

242092C

Owner's Record

Please complete and retain with your personal records.

Model Name	Serial/Style Number
Purchase Date	(Date which equipment was delivered to original customer.)
Distributor	
Address	
City	
State	Zip

For Service

Contact a DISTRIBUTOR or SERVICE AGENCY near you.

Always provide Model Name and Serial/Style Number.

Contact your Distributor for:	Welding Supplies and Consumables Options and Accessories Personal Safety Equipment Service and Repair Replacement Parts Training (Schools, Videos, Books) Technical Manuals (Servicing Information and Parts) Circuit Diagrams Welding Process Handbooks To locate a Distributor or Service Agency visit www.millerwelds.com or call 1-800-4-A-Miller
Contact the Delivering Carrier to:	File a claim for loss or damage during shipment. For assistance in filing or settling claims, contact your distributor and/or equipment manufacturer's Transportation Department.

Miller Electric Mfg. Co.
An Illinois Tool Works Company
1635 West Spencer Street
Appleton, WI 54914 USA

International Headquarters–USA
USA Phone: 920-735-4505 Auto-Attended
USA & Canada FAX: 920-735-4134
International FAX: 920-735-4125

For International Locations Visit
www.MillerWelds.com

ORIGINAL INSTRUCTIONS – PRINTED IN USA

 2011–01