



PARTS MANUAL

RADIANT

SF80

SF120

SF160



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Using This Manual:

FOLLOW THE STEPS LISTED BELOW:

1. Determine which part needs to be replaced by using the troubleshooting guide or getting in contact with SunFire support by visiting sunfireheaters.com or calling 1 (855) 251-1649.
2. Reference the table of contents to find the appropriate page.
3. Use the diagrams and item number balloons to locate the part you need.
4. Use the identification table to cross reference and find the needed part number.
5. Go to sunfireheaters.com or call 1 (855) 251-1649 to order your replacement parts.

PRODUCT AND PRICE INFORMATION:

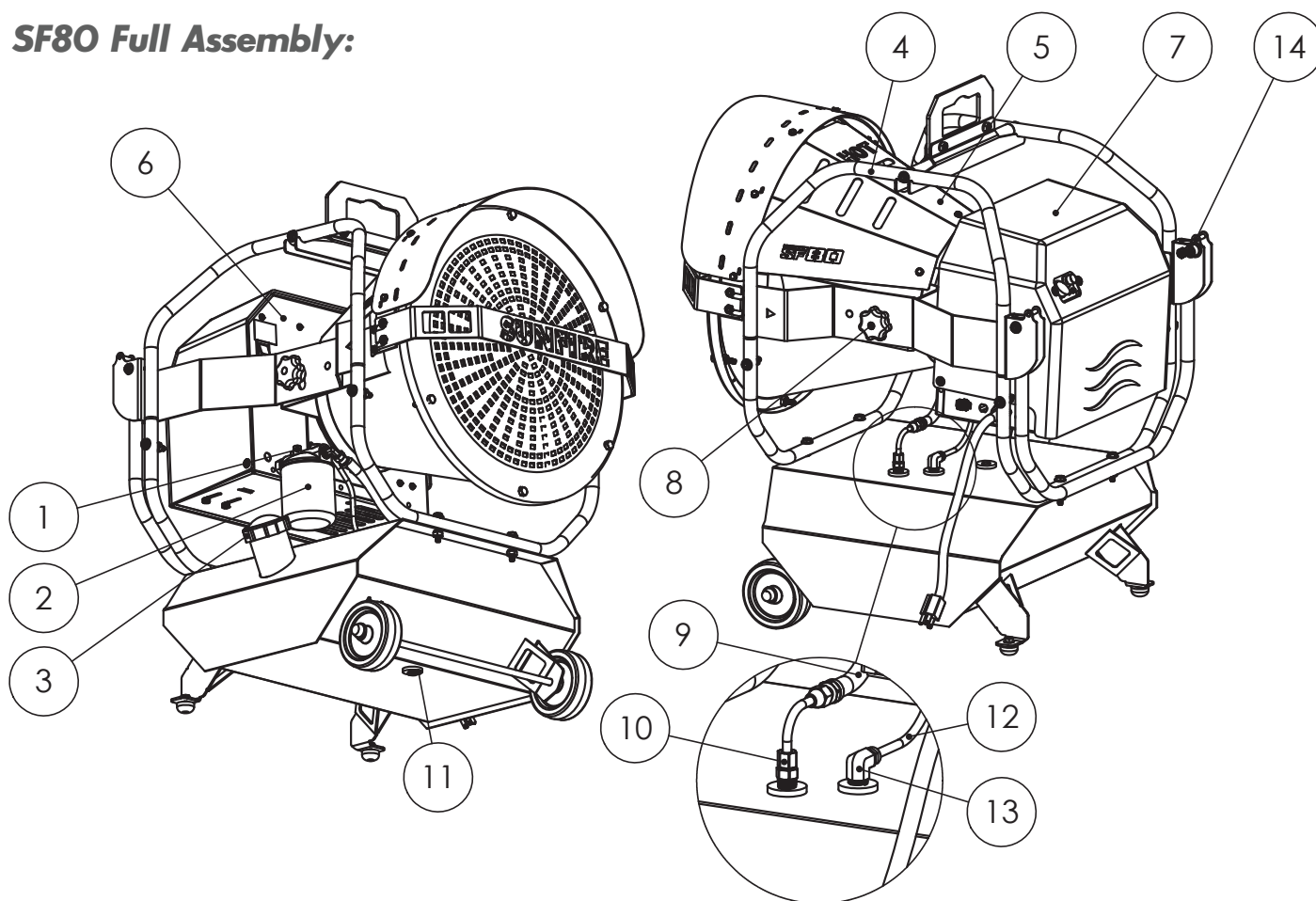
1. Availability of products in SunFire parts manuals are subject to change without notice.
2. Descriptions may not reflect current technical specifications.
3. Any specifications in products or pricing is subject to change without notice.

Contact SunFire support with questions, comments, or concerns regarding products and pricing.

DISCLAIMERS:

1. All content in SunFire parts manuals is subject to change without notice.
2. Products may vary in appearance.
3. Advertising and selling parts over the internet is prohibited.

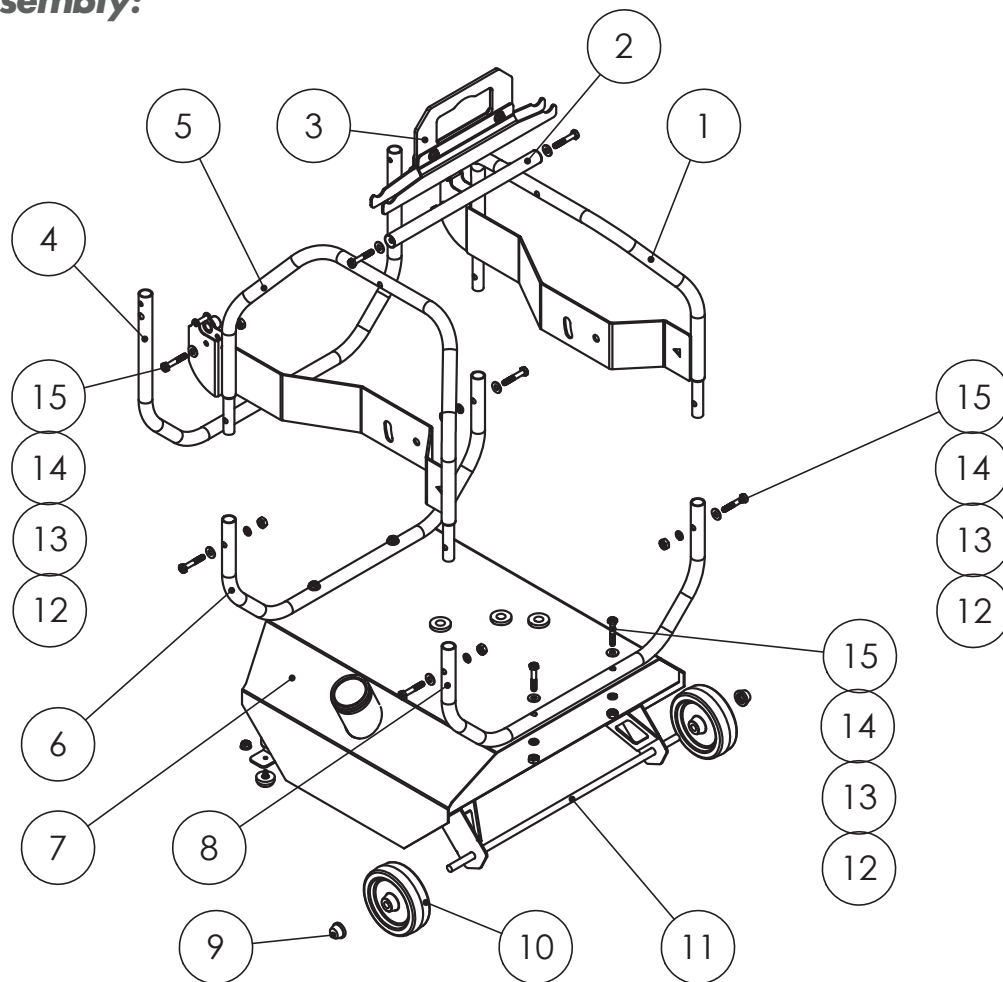
SF80 Full Assembly:



IDENTIFICATION TABLE

DRAWING NUMBER	81012898	
REVISION	A	
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	81010874	FILTER HEAD
2	81010875	SPIN-ON FUEL FILTER
3	81011617	FUEL GAUGE
4	81011616	FRAME ASSEMBLY
5	81011363	DOME ASSEMBLY
6	81011734	BURNER ASSEMBLY
7	81010617	BURNER COVER
8	81010980	TILT-ADJUSTMENT KNOB
9	81011657	SUCTION-LINE HOSE
10	81011655	DRAW-TUBE ASSEMBLY SF80
11	81010954	DRAIN PLUG
12	81010881	RETURN LINE
13	81010880	1/4" NPT 90° ELBOW X 1/4" OD COMPRESSION
14	81011434	HANDLE LOCKING PIN

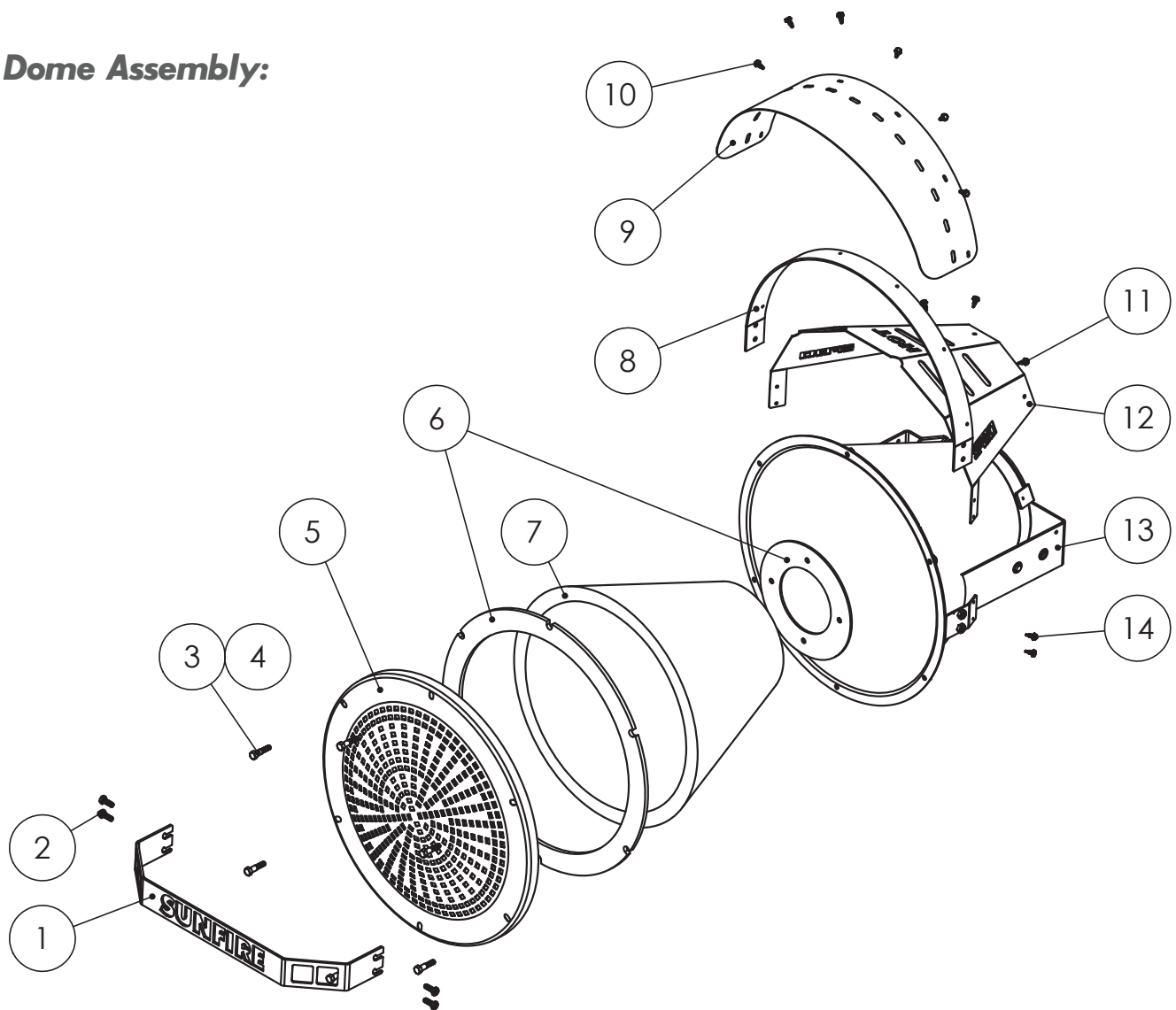
SF80 Frame Assembly:



IDENTIFICATION TABLE

DRAWING NUMBER	81012880	
REVISION	A	
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	81011377	WELDMENT - UPPER LEFT SF80
2	81011624	ASSEMBLY - CROSSBAR SF80
3	81011902	ASSEMBLY - CRANE BRACKET SF80 (OPTIONAL)
4	81011380	TUBE - HANDLE SF80
5	81011376	WELDMENT - UPPER RIGHT SF80
6	81011379	TUBE - LOWER FRAME SF80
7	81011351	FUEL TANK
8	81011379	TUBE - LOWER FRAME SF80
9	81011361	3/8" WHEEL RETAINER
10	81011358	4" WHEEL
11	81011359	WELDMENT - AXLE TUBE SF80
12	81010968	1/4-20 HEX NUT BLACK OXIDE
13	81010967	1/4-20 SS SPLIT LOCK WASHER BLACK OXIDE
14	81010966	1/4-20 SS WASHER BLACK OXIDE
15	81010963	1/4-20X1-1/2" HEX HEAD BOLT BLACK OXIDE

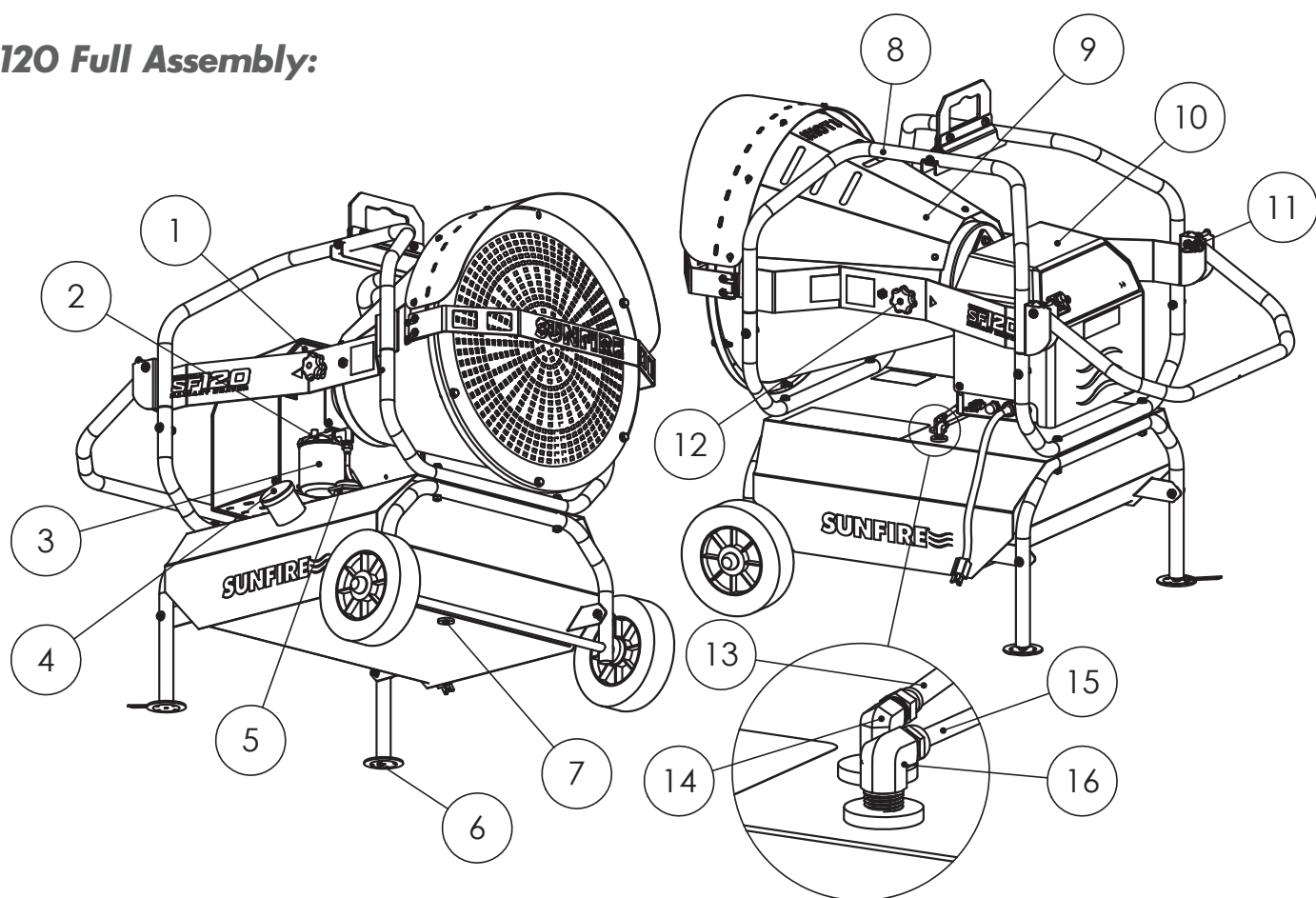
SF80 Dome Assembly:



IDENTIFICATION TABLE

DRAWING NUMBER	81012881	
REVISION	A	
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	81011372	FLAME GUARD
2	81010959	1/4-20X3/4" SS HEX HEAD SCREW
3	81010958	SS SHOULDER BOLTS
4	81011036	5/16" ID .094" TH SS WASHER
5	81011362	DOME FACE SF80
6	81011368	DOME GASKET SF80
7	81011370	DOME INSULATION SF80
8	81011369	MOUNTING RING SF80
9	81011373	VISOR SF80
10	7014	#10X1/2" GALV TEK SCREW
11	81010960	#10X1/2" BLACK TEK SCREW
12	81011371	HEAT SHIELD SF80
13	81011364	WELDMENT - DOME
14	81010960	#10X1/2" BLACK TEK SCREW

SF120 Full Assembly:



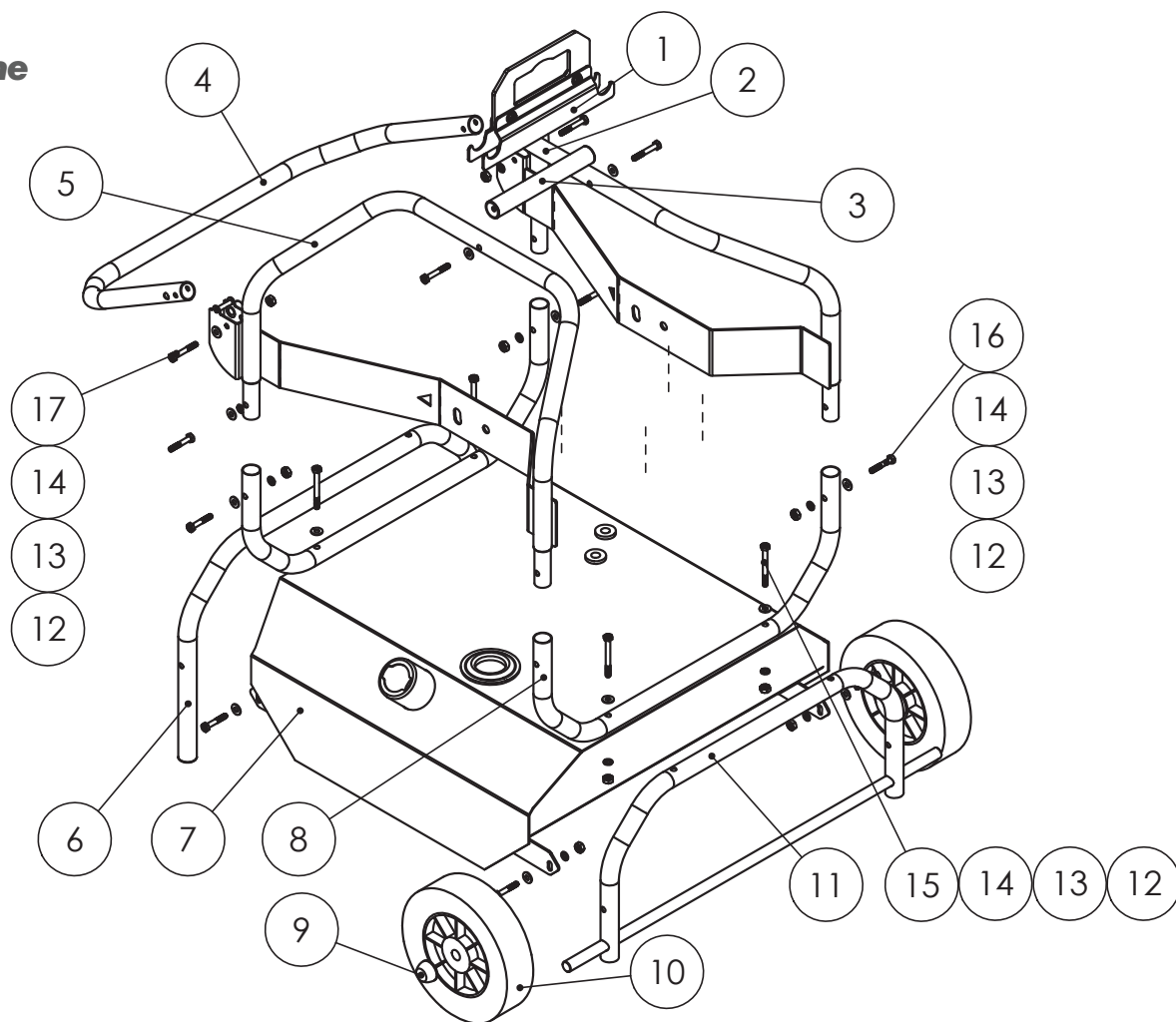
IDENTIFICATION TABLE

DRAWING NUMBER		81012899
REVISION		A
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	81010600-SVC	BURNER ASSEMBLY
2	81010874	FILTER HEAD
3	81010875	SPIN-ON FUEL FILTER
4	81010884	FUEL CAP
5	81010885	FUEL GAUGE
6*	81011053/81011468	FOOT PADS
7	81010954	DRAIN PLUG
8	81010974	FRAME ASSEMBLY
9	81010794	DOME ASSEMBLY
10	81010617	BURNER COVER
11	81011434	HANDLE LOCKING PIN
12	81010980	TILT-ADJUSTMENT KNOB
13	81012380	SUCTION-LINE HOSE
14	81012368	PICKUP-TUBE ASSEMBLY
15	81010881	RETURN LINE
16	81010880	1/4" NPT 90° ELBOW X 1/4" OD COMPRESSION

*SERIAL NUMBERS BEFORE SF-120-01379 USE 81011053, AT AND AFTER USE 81011468

SF120 Frame

Assembly:

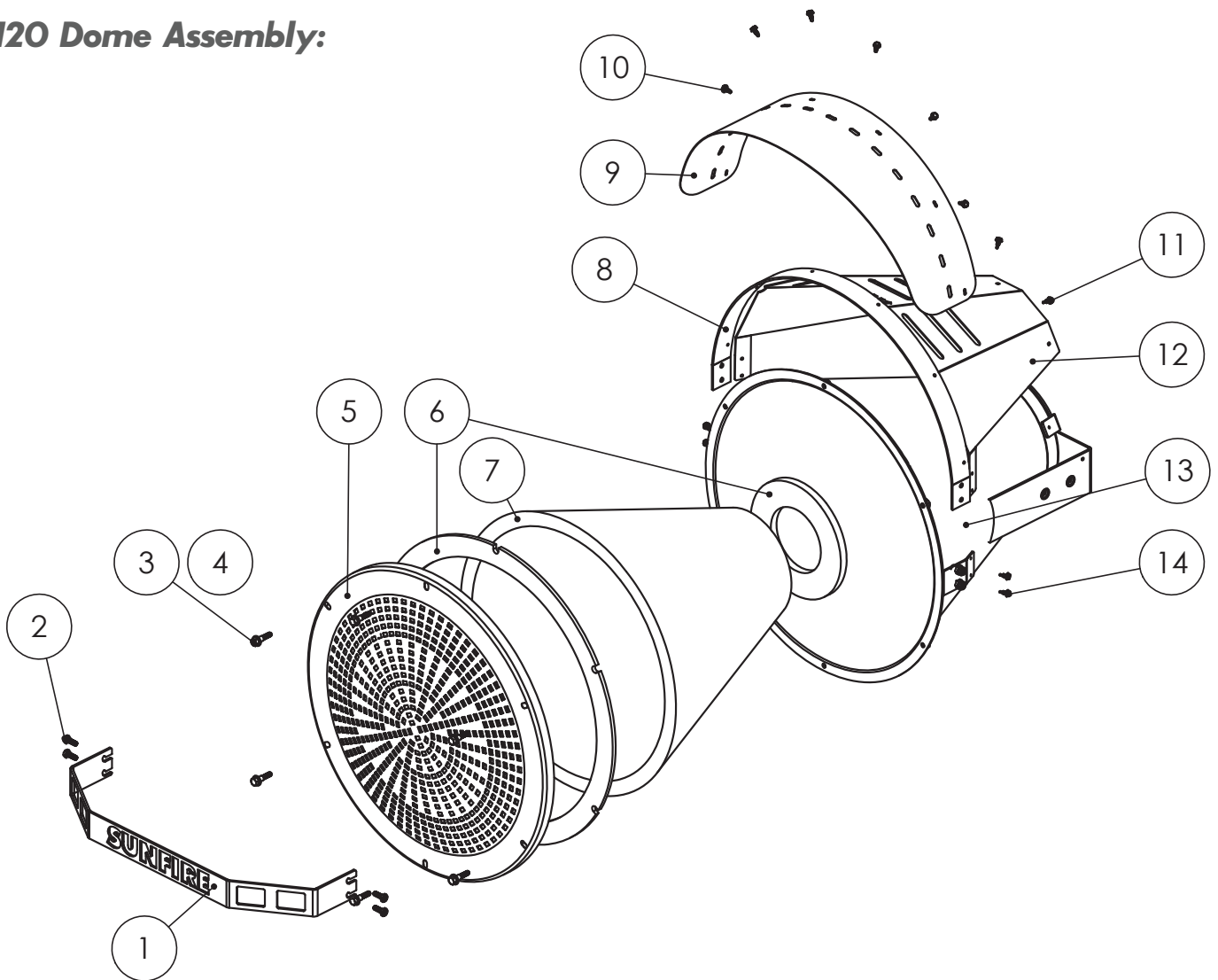


IDENTIFICATION TABLE

DRAWING NUMBER			81012885
REVISION			A
ITEM NUMBER	PART NUMBER	DESCRIPTION	
1	81010926	ASSEMBLY - CRANE BRACKET SF120	
2	81010948	WELDMENT - UPPER LEFT SF120	
3*	81011001/81013111	ASSEMBLY - CROSSBAR SF120	
4	81010798	TUBE - HANDLE SF120	
5	81010949	WELDMENT - UPPER RIGHT SF120	
6	81010923	ASSEMBLY - LOWER FRAME SF120	
7	81010624	FUEL TANK	
8	81010782	TUBE - LOWER SF120	
9	34505	5/8" WHEEL RETAINER	
10	81010768	8" WHEEL	
11	81011000	WELDMENT - AXLE TUBE SF120	
12	81010968	1/4-20 HEX NUT BLACK OXIDE	
13	81010967	SS SPLIT LOCK WASHER BLACK OXIDE	
14	81010966	1/4-20 SS WASHER BLACK OXIDE	
15	81010965	1/4-20X2-1/2" HEX HEAD BOLT BLACK OXIDE	
16	81010963	1/4-20X1-1/2" HEX HEAD BOLT BLACK OXIDE	
17	81010964	1/4-20X1-3/4" HEX HEAD BOLT BLACK OXIDE	

*FOR 1/4" THREADS USE 81011001, FOR 3/8" THREADS USE 81013111

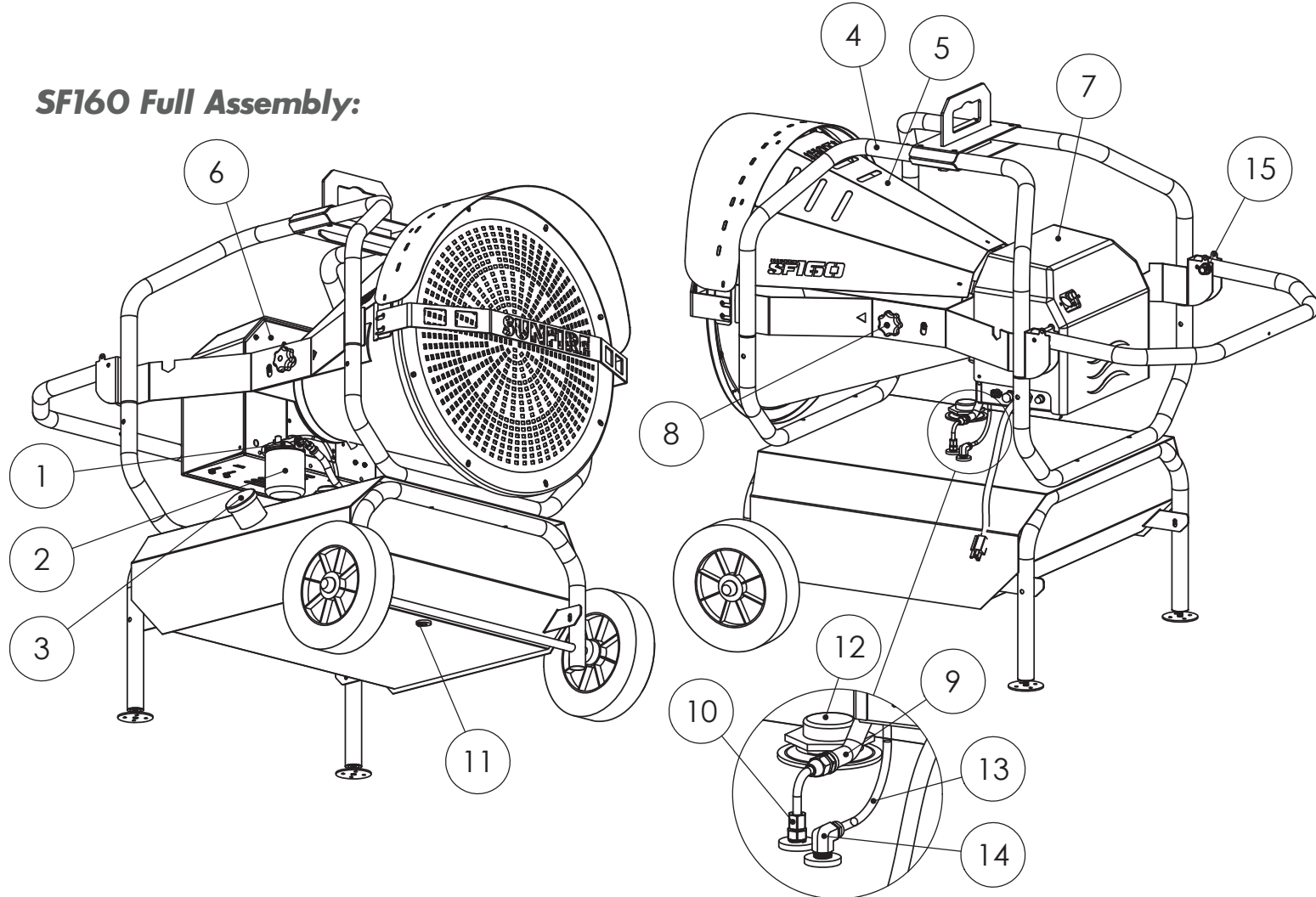
SF120 Dome Assembly:



IDENTIFICATION TABLE

DRAWING NUMBER	81012886	
REVISION	A	
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	81010761	FLAME GUARD
2	81010959	1/4-20X3/4" SS HEX HEAD SCREW
3	81010958	SS SHOULDER BOLTS
4	81011036	5/16" ID .094" TH SS WASHER
5	81010757	DOME FACE SF120
6	81010795	DOME GASKET SF120
7	81010762	DOME INSULATION SF120
8	81010793	MOUNTING RING SF120
9	81010760	VISOR SF120
10	7014	#10X1/2" GALV TEK SCREW
11	81010960	#10X1/2" BLACK TEK SCREW
12	81010759	HEAT SHIELD SF120
13	81010937	WELDMENT - DOME
14	81010960	#10X1/2" BLACK TEK SCREW

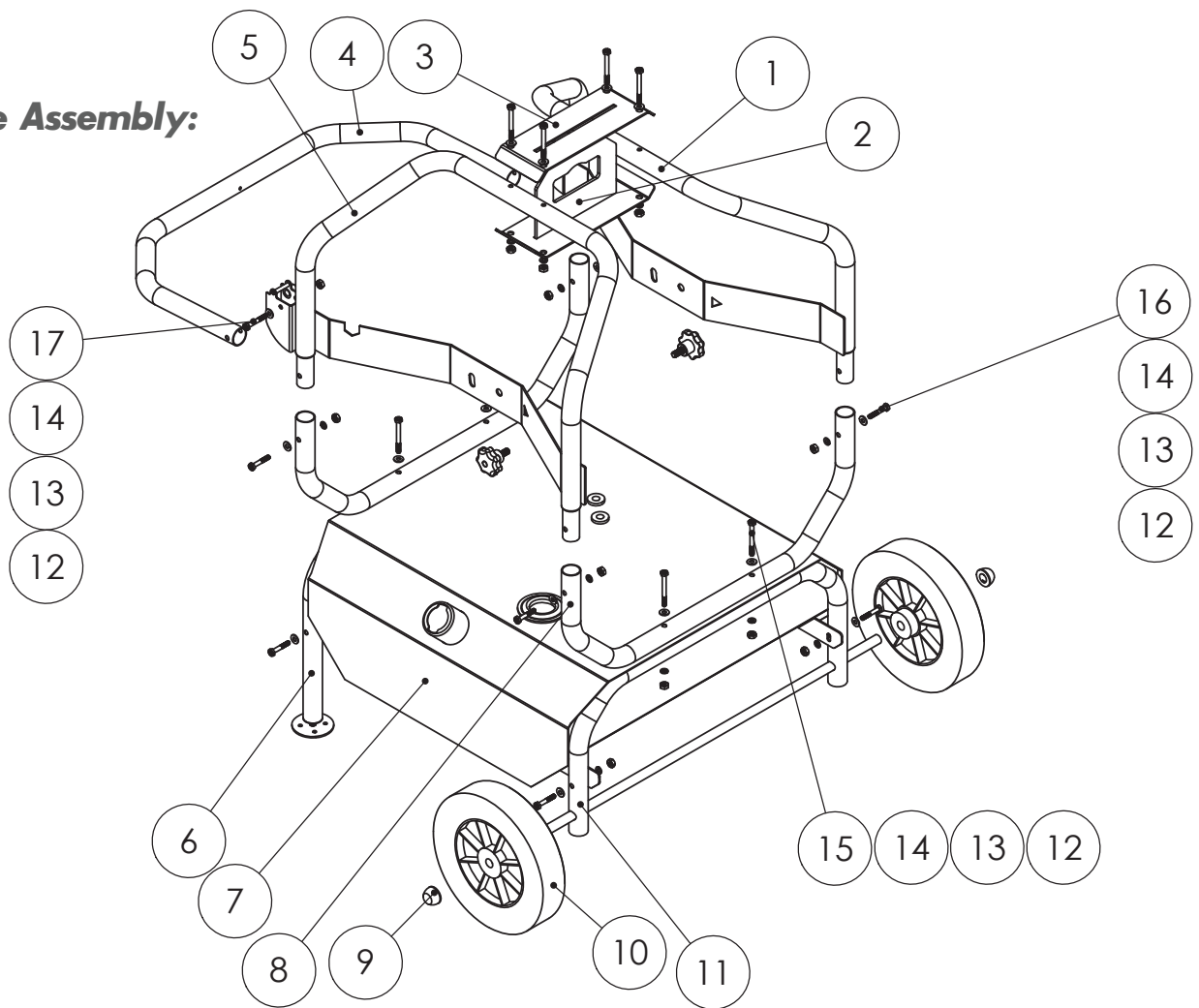
SF160 Full Assembly:



IDENTIFICATION TABLE

DRAWING NUMBER	81012900	
REVISION	A	
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	81010874	FILTER HEAD
2	81010875	SPIN-ON FUEL FILTER
3	81010884	FUEL CAP
4	81012774	FRAME ASSEMBLY
5	81012454	DOME ASSEMBLY
6	81012539-SVC	BURNER ASSEMBLY
7	81010617	BURNER COVER
8	81010980	TILT-ADJUSTMENT KNOB
9	81011657	SUCTION-LINE HOSE
10	81012769	DRAW-TUBE ASSEMBLY SF160
11	81010954	DRAIN PLUG
12	81012767	FUEL GAUGE
13	81010881	RETURN-LINE SF160
14	81010880	1/4" NPT 90° ELBOW X 1/4" OD COMPRESSION
15	81011434	HANDLE LOCKING PIN

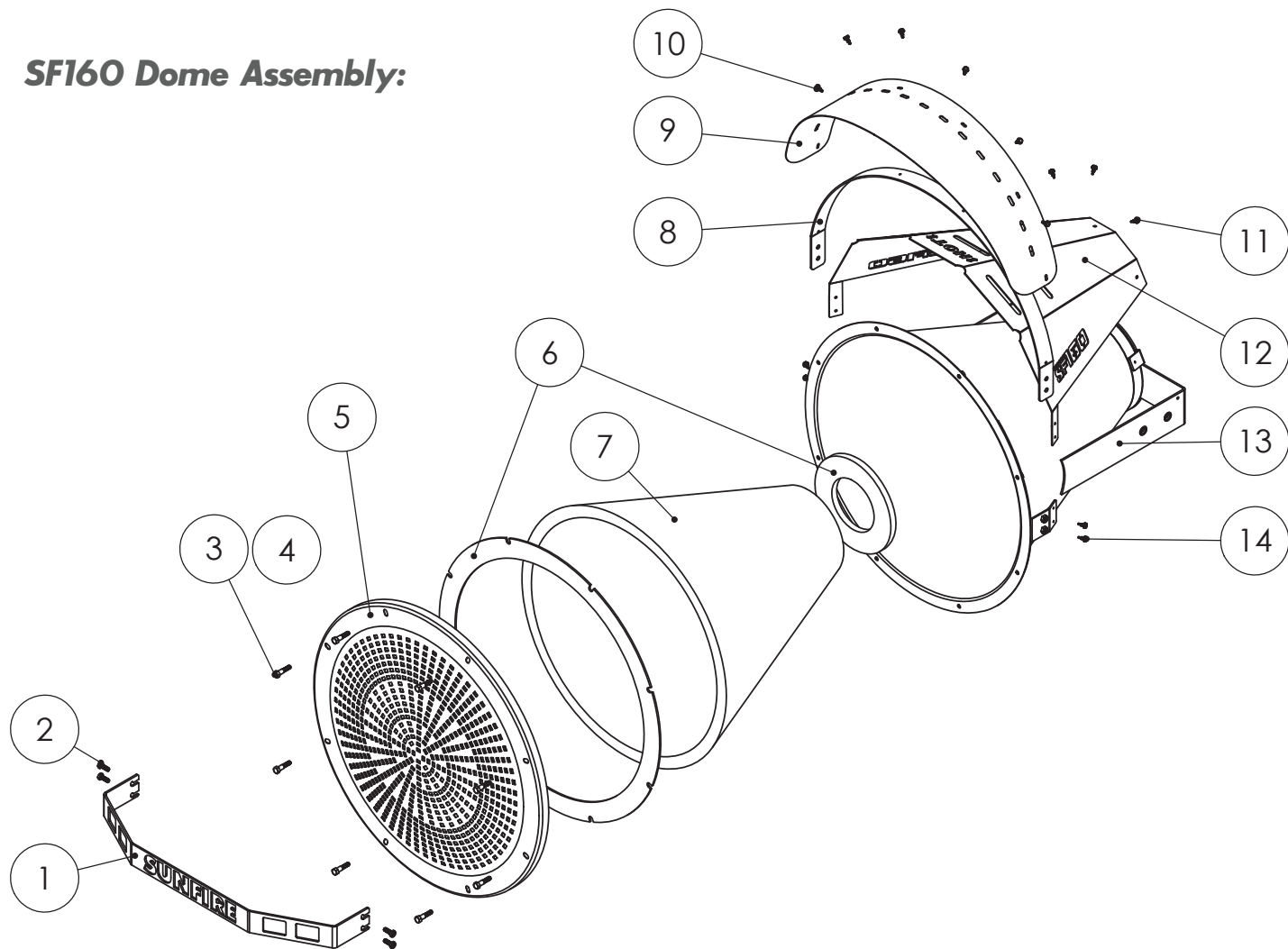
SF160 Frame Assembly:



IDENTIFICATION TABLE

DRAWING NUMBER	81012890	
REVISION	A	
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	81012472	WELDMENT - UPPER LEFT SF160
2	81012532	WELDMENT - CRANE BRACKET SF160
3	81012530	PLATE - CRANE BRACKET SF160
4	81012522	TUBE - HANDLE SF160
5	81012471	WELDMENT - UPPER RIGHT SF160
6	81012508	ASSEMBLY - LOWER FRAME SF160
7	81012659	FUEL TANK
8	81012469	TUBE - LOWER SF160
9	34505	5/8" WHEEL RETAINER
10	29518	10" WHEEL
11	81012480	WELDMENT - AXLE TUBE SF160
12	81010968	1/4-20 HEX NUT BLACK OXIDE
13	81010967	SS SPLIT LOCK WASHER BLACK OXIDE
14	81010966	1/4-20 SS WASHER BLACK OXIDE
15	81010965	1/4-20X2-1/2" HEX HEAD BOLT BLACK OXIDE
16	81010963	1/4-20X1-1/2" HEX HEAD BOLT BLACK OXIDE
17	81010964	1/4-20X1-3/4" HEX HEAD BOLT BLACK OXIDE

SF160 Dome Assembly:

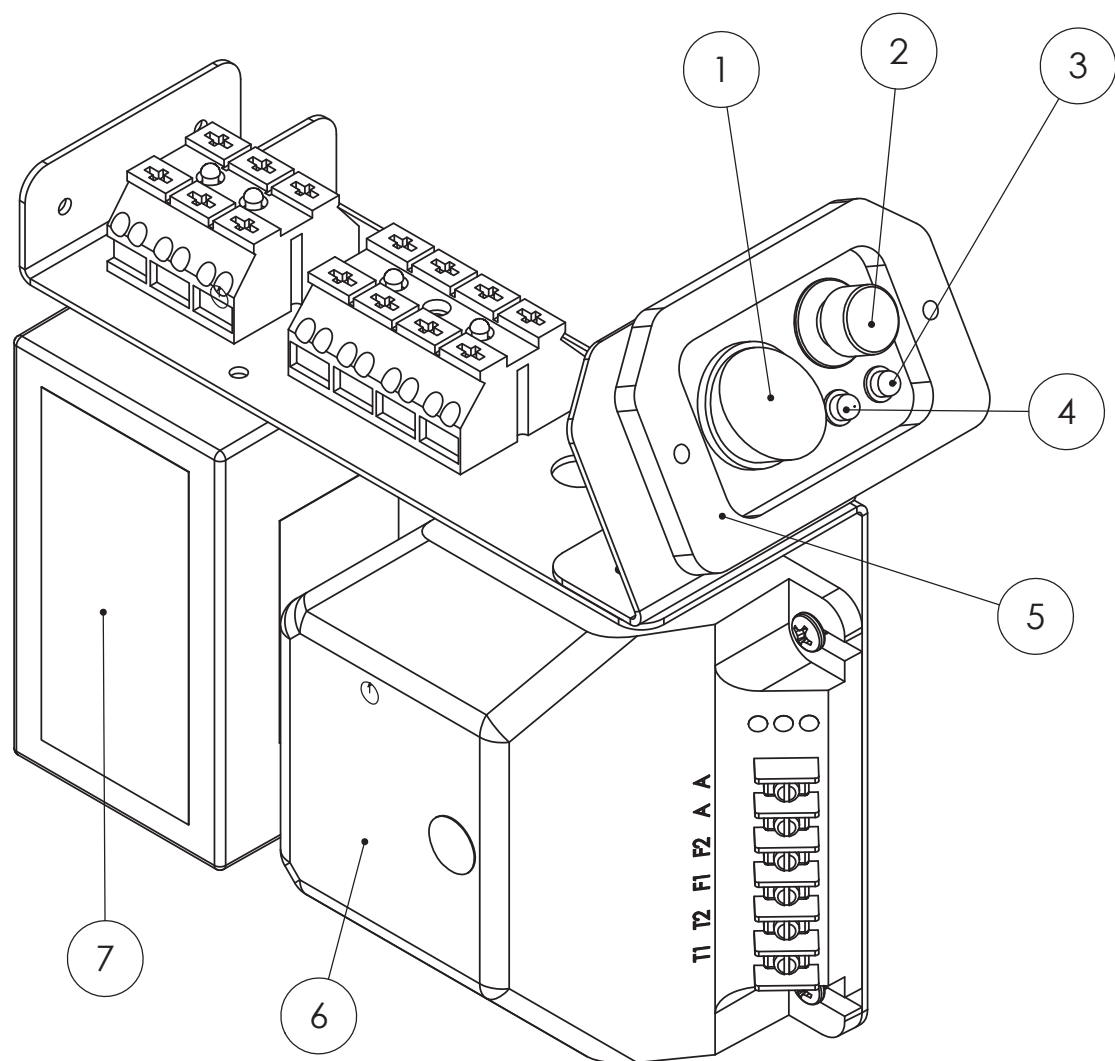


IDENTIFICATION TABLE

IDENTIFICATION TABLE		
DRAWING NUMBER	81012891	
REVISION	A	
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	81012458	FLAME GUARD
2	81010959	1/4-20X3/4" SS HEX HEAD SCREW
3	81010958	SS SHOULDER BOLTS
4	81011036	5/16" ID .094" TH SS WASHER
5	81012442	DOME FACE SF160
6	29542	INSULATION GASKETS SF160
7	29508	DOME INSULATION SF160
8	81012455	MOUNTING RING SF160
9	81012456	VISOR SF160
10	7014	#10X1/2" GALV TEK SCREW
11	81010960	#10X1/2" BLACK TEK SCREW
12	81012457	HEAT SHIELD SF160
13	81012450	WELDMENT - DOME
14	81010960	#10X1/2" BLACK TEK SCREW



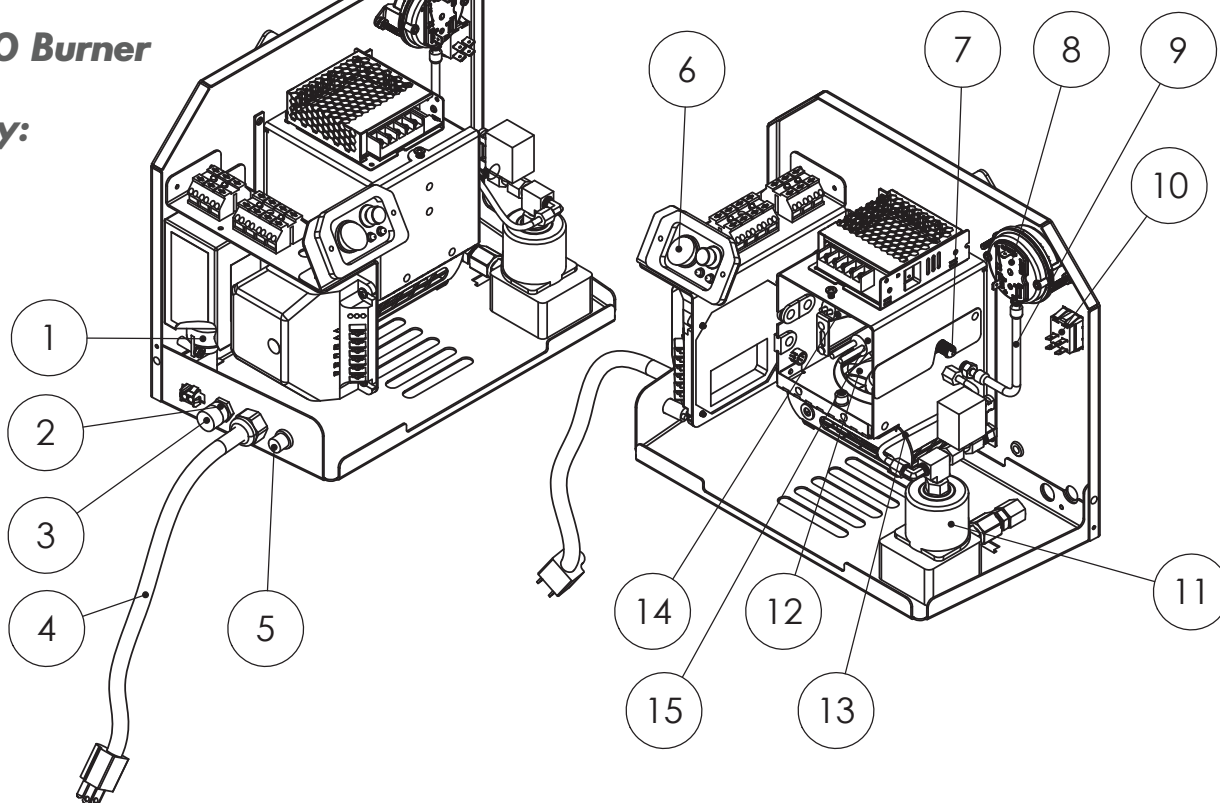
Electrical Bracket Assembly:



IDENTIFICATION TABLE		
DRAWING NUMBER	81012893	
REVISION	A	
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	29449	POWER SWITCH ON/OFF
2	81010629	RESET BUTTON SPST MOMENTARY
3	81010628	RED LED LIGHT
4	81010627	GREEN LED LIGHT
5	81010868	SWITCH AND LIGHT GASKET
6	37502	PRIMARY CONTROL SF160
7	37501	ELECTRIC IGNITER SF160

SF80/160 Burner

Assembly:



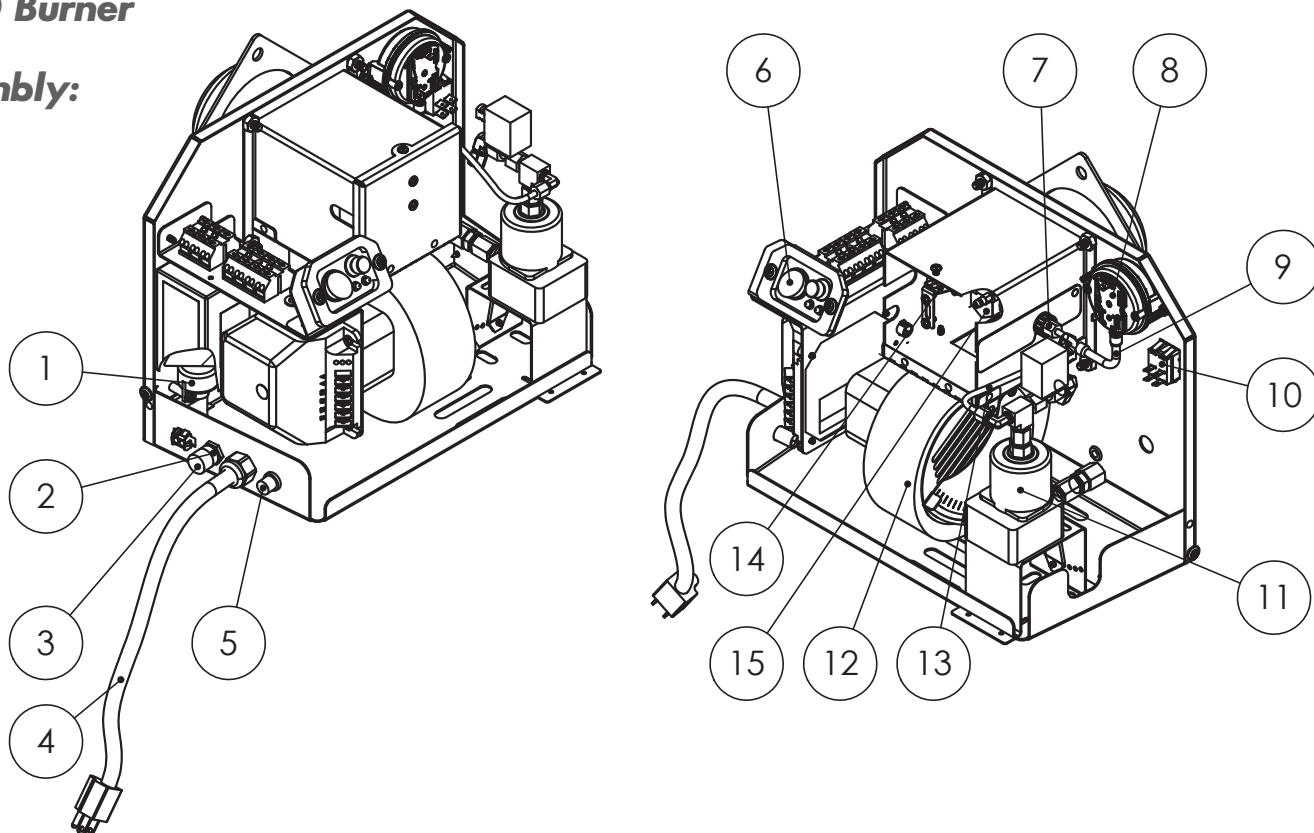
IDENTIFICATION TABLE

IDENTIFICATION TABLE			
DRAWING NUMBER	81012892		
REVISION	A		
ITEM NUMBER	PART NUMBER		DESCRIPTION
	SF80	SF160	
1	29450		TIP SWITCH
2	76000841		FUSE HOLDER
3	20510113		FUSE - FA 8A 250V
4	29437		POWER CORD
5	33168		LED AMBER LIGHT
6	81010978		ELECTRICAL BRACKET ASSEMBLY
7	20410110		KNURLED NUT
8	81010896		PRESSURE SWITCH
9	81011017		TUBE - PRESSURE SWITCH
10*	81012618		PRIME SWITCH
11	81012773		PUMP ASSEMBLY WITH FITTINGS
12	81011395	81012653	BLOWER (CHASSIS MOUNT ON SF80, TRAY MOUNT ON SF160)
13	81011210	81012657	COPPER LINE
14	8981		CAD CELL
15	81011586	81012788	NOZZLE BLOCK ASSEMBLY
16	81010597		IGNITION CABLES (NOT SHOWN)
17	81010579		BURNER GASKET (NOT SHOWN)
*BLACK PRIME SWITCH IS 81010893, RED IS 81012618			

*BLACK PRIME SWITCH IS 81010893, RED IS 81012618

SF120 Burner

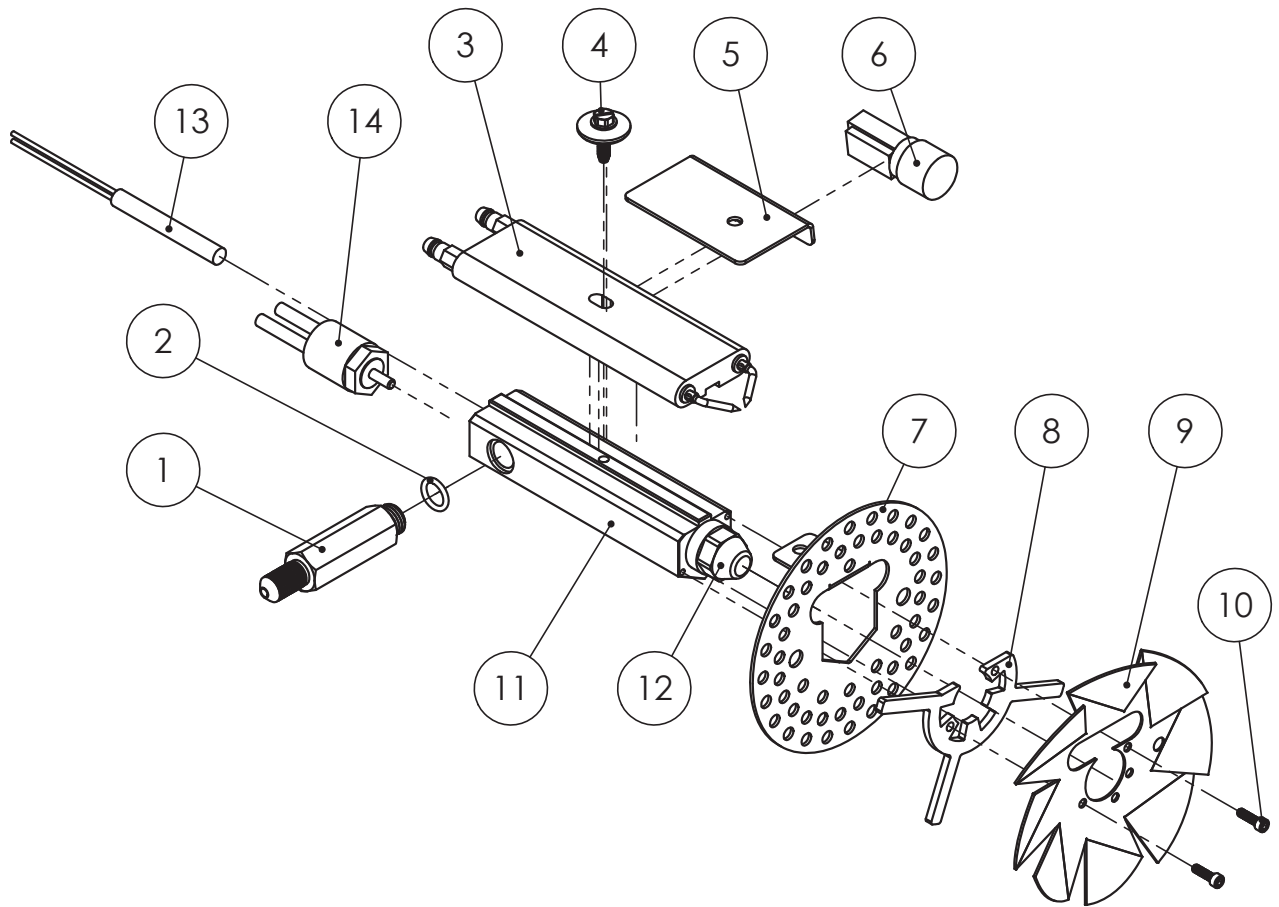
Assembly:



IDENTIFICATION TABLE

DRAWING NUMBER	81012887	
REVISION	A	
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	29450	TIP SWITCH
2	76000841	FUSE HOLDER
3	20510113	FUSE - FA 8A 250V
4	29437	POWER CORD
5	33168	LED AMBER LIGHT
6	81010978	ELECTRICAL BRACKET ASSEMBLY
7	20410110	KNURLED NUT
8	81010896	PRESSURE SWITCH
9	81011017	TUBE - PRESSURE SWITCH
10*	81012618	PRIME SWITCH
11	81010872	PUMP ASSEMBLY WITH FITTINGS
12	81010604	BLOWER
13	81011210	COPPER LINE
14	8981	CAD CELL
15	81010607	NOZZLE BLOCK ASSEMBLY
16	81010597	IGNITION CABLES (NOT SHOWN)
17	81010579	BURNER GASKET (NOT SHOWN)
*BLACK PRIME SWITCH IS 81010893, RED IS 81012618		

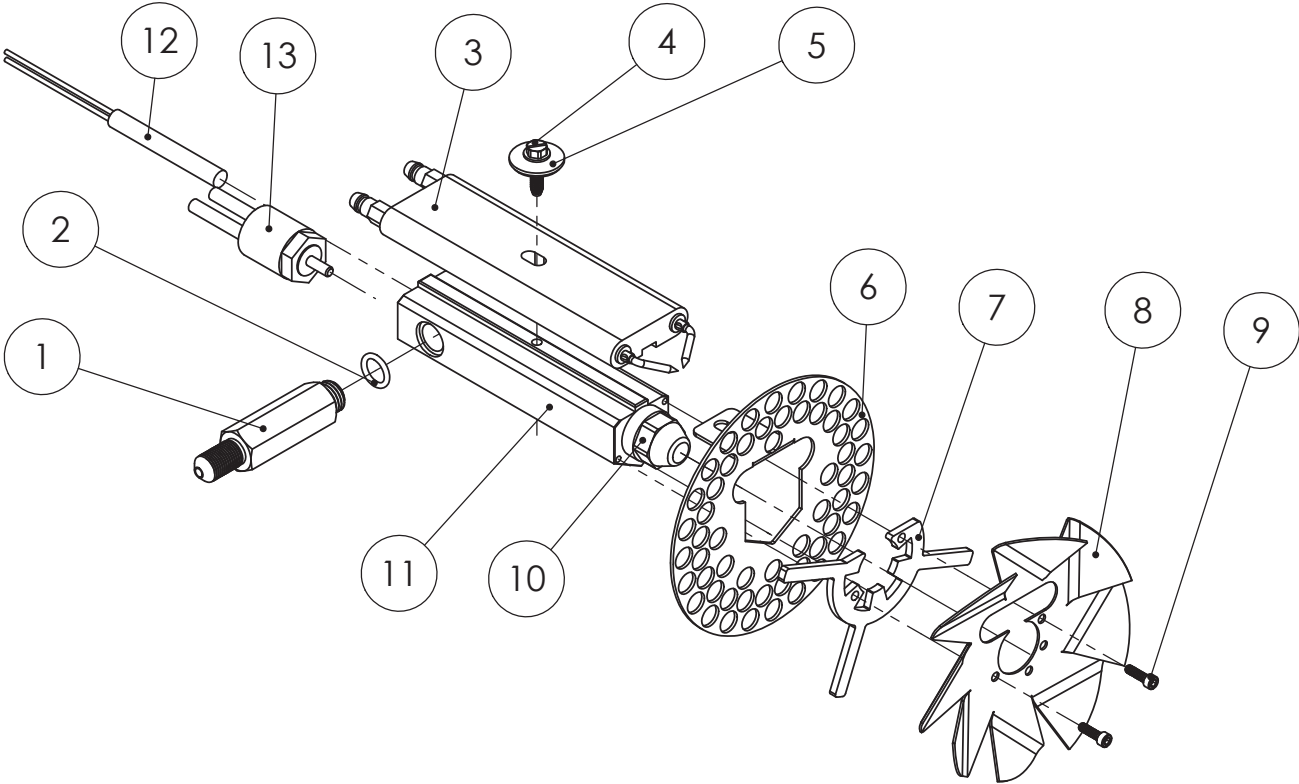
SF80 Nozzle Line Assembly:



IDENTIFICATION TABLE

DRAWING NUMBER	81012884	
REVISION	A	
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	81010612	FITTING - BULKHEAD
2	76001386	O-RING VITON
3	81010611	ELECTRODE ASSEMBLY
4	20410117	8-32X0.625 SLOTTED HEX WASHER HEAD
5	81011731	CAD CELL BRACKET
6	8981	CAD CELL
7	81011393	DIFFUSER PLATE
8	81010867	CENTERING DEVICE
9	81011588	SPINNER
10	81010952	4-40X3/8" SOCKET HEAD CAP SCREW
11	81010610	HEX NOZZLE BLOCK
12	81011926	NOZZLE
13	81012770	NOZZLE LINE HEATER
14	81012372	6-32 STUD TEMPERATURE SWITCH

SF120/SF160 Nozzle Line Assembly:



IDENTIFICATION TABLE			
DRAWING NUMBER	81012894		
REVISION	A		
ITEM NUMBER	PART NUMBER		DESCRIPTION
	SF120	SF160	
1	81010612		FITTING - BULKHEAD
2	76001386		O-RING VITON
3	81010611		ELECTRODE ASSEMBLY
4	20410117		8-32X0.625 SLOTTED HEX WASHER HEAD
5	20410115		#8X3/4" ELECTRODE WASHER
6	81010873		DIFFUSER PLATE
7	81010867		CENTERING DEVICE
8	81010609		SPINNER
9	81010952		4-40X3/8" SOCKET HEAD CAP SCREW
10	81011058	81012789	NOZZLE
11	81010610		HEX NOZZLE BLOCK
12	81012770		NOZZLE LINE HEATER
13	81012372		6-32 STUD TEMPERATURE SWITCH

Troubleshooting:

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Will not start.	Main electrical power circuit breaker tripped or blown fuse (AMBER light off)	Reset breaker or replace fuse. If power is present but AMBER light is off, replace bulb.
	Primary control safety tripped (RED light illuminated)/primary control defective	Reset/test components, replace if needed. Contact SunFire or your local dealer.
	Flame sensor is sensing light (GREEN light on) / defective	Point the dome face away from any bright light sources. If problem persists, contact SunFire or your local dealer.
	Thermostat circuit is open (bad contact, missing contact, or not fully connected)	Be sure the thermostat jumper is securely connected. If using a thermostatic control, be sure it is connected properly and set to call for heat.
	Tip switch contacts are open	If plugged in and AMBER light is on. Make sure SunFire unit is level. If level, tip switch may be defective.
2. Attempts to fire but does not establish a flame	Unit is not primed	Use the PRIME switch to fill the fuel system.
	Clogged nozzle	Replace the nozzle.
	Dirty fuel filter	Change the fuel filter.
	Air bubble in fuel line	Use the PRIME switch to clear the fuel system of air.
	Suction Leak	Tighten all fuel-pickup pipe fittings and make sure the fuel filter is tightened snugly to the filter head.
	Ignition system defective	Replace defective component.
3. Fires and then persistently fails within 30 seconds	Flame sensor is misaligned / dirty / defective	Clean flame sensor with a soft, damp cloth and confirm that it is oriented toward the combustion chamber when in operational position. Replace if defective.
4. Fires and then fails after 30 seconds / Heater experiences intermittent shutdown NOTE: If the pump sounds loud at times during normal operation (like during initial priming), this typically indicates either a suction leak or air bubble in the fuel line.	Air bubble in fuel line	Use the PRIME switch to clear the fuel system of air. If the problem persists, remove the fuel filter and fill it with fuel. Then, reinstall the filter and reattempt priming.
	Suction Leak	Tighten all fuel-pickup pipe fittings and make sure the fuel filter is tightened snugly to the filter head. Do not over tighten.
	Dirty fuel filter	Change the fuel filter.
	Clogged nozzle	Replace the nozzle.
	Contaminated fuel supply	Drain tank from plug, clean and fill with clean fuel.
	Improper power supply (Pure sine wave inverters minimum 800W)	Check power supply. If using a generator, run generator for 20 minutes and retry. If using an inverter, try a clean power supply. Try different power supply.
	Poor ventilation	Check ventilation from the outdoors to the operation area. 3 sq ft of ventilation per gal/h recommended. See Safety Information.
5. Black smoke or flames protruding through holes in dome face (whisking). Light flame whisking may occur at cold start but should dissipate quickly.	Nozzle is dirty or clogged	Replace the nozzle.
	Flame needs adjustment	See Flame Adjustment section.
6. Small flame/low heat output	Flame needs adjustment	See Flame Adjustment section.
	Dirty fuel filter	Change the fuel filter.
	Clogged nozzle	Replace the nozzle.
	Fuel pump defective	Contact SunFire or your local dealer.

If your issue was not described here, or for further assistance, please contact your local AUTHORIZED SUNFIRE DEALER, find more information at sunfireheater.com/support, or call the manufacturer directly at (855) 251-1649.



Warranty & Legal Information:

WARRANTY INFORMATION

Rock Energy Systems, LLC (SUNFIRE) warrants that its Heaters and component parts will be free from defects in material and workmanship for a period of two [2] years from the date of purchase when properly assembled, operated, and maintained in accordance with the assembly and maintenance instructions, safety guides and labels contained with each unit. If any component proves defective in either material or workmanship during the limited warranty period, SUNFIRE at its option, may repair the defective part or equipment or replace the equipment or relevant parts. Proof of purchase and warranty qualification must be established at time of all claims.

BILL OF SALE: A copy of the bill of sale must be provided at time of return.

CLAIM PROCEDURE: Contact the manufacturer at (855) 251-1649 or an AUTHORIZED SUNFIRE DEALER for all technical support and claims. You may also visit sunfireheaters.com/warranty.

This limited warranty does not apply to heater, component or replacement part damage resulting from incorrect assembly, misuse, abuse, accident, act of God, neglect, mishandling, contaminated fuel, modification, incorrect environments, or wear from ordinary use.

This is the only warranty SUNFIRE offers. All other warranties are excluded. If the law requires any implied warranty, it only lasts as long as this warranty. The remedies listed are the only ones available. SUNFIRE is not responsible for indirect or additional damages, and its maximum liability for any claim is limited to the purchase price of the equipment.

PRODUCT REGISTRATION

Help us serve you better by registering your heater.
Receive product updates, future specials, and offers.

RAPID REGISTRATION QR CODE



sunfireheaters.com/register-heater

TRADEMARKS

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