



**BRAVO 80 PARTS CATALOG**

**PROHEAT**

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# SAFETY

Throughout this manual, you will see notes labeled **DANGER**, **WARNING**, **CAUTION**, and **NOTICE** to alert you to special instructions or precautions concerning a particular procedure that would be hazardous if performed incorrectly or carelessly.

Observe them carefully!

These safety alerts alone cannot eliminate all hazards. Strict compliance with these special instructions and common sense are major accident prevention measures.

## **▲ DANGER**

**Immediate hazards that will result in severe injury or death.**

## **▲ WARNING**

**Hazards or unsafe practices that could result in severe personal injury or death.**

## **▲ CAUTION**

**Hazards or unsafe practices that could result in minor injury or product or property damage.**

## **NOTICE**

Information that is important to proper installation or maintenance, but is not hazard-related.

# SAFETY CONSIDERATIONS

**⚠ WARNING**

**⚠ WARNING**

**⚠ WARNING**

**⚠ WARNING**

**⚠ WARNING**

**⚠ WARNING**

**⚠ WARNING**

**⚠ WARNING**

**⚠ WARNING**

**⚠ DANGER**

## Exhaust

Inhalation of exhaust gas (containing carbon monoxide) may cause severe personal injury and/or death. Anyone suspected of suffering from CO inhalation should be removed from the hazardous area and given medical assistance immediately.

## Explosion Hazard

Do not operate heater where combustible fumes or airborne particles, such as sawdust, are present.

## Fuel

Exercise extreme caution when working near fuel or fuel-filled equipment. Do not operate heater during fueling operations. In addition, do not smoke or handle open flame equipment, such as a blowtorch, around fuel.

## Fire Hazard

Do not place any flammable items around the heater and exhaust pipe.

## Batteries

Wear hand and eye protection when working near batteries. Do not smoke or use open flames near batteries.

## Electrical

Electric shock can cause severe personal injury, burns, and death. Before working on any unit, disconnect the batteries. Use only approved materials and methods when working on the electrical system and follow local electrical codes. Never work with electricity in wet conditions or when you are feeling fatigued.

## Poisons/Toxins

Fuel and coolant are toxic and in some cases, carcinogenic. Wear eye and hand protection at all times. Remove contaminated clothing immediately and wash contaminated skin. Do not breathe in vapors.

## Moving/Hot Parts

Moving parts can cause severe injury and or death. Before working on any unit, shut it off. Do not operate any unit until protective covers have been replaced. Always ensure bolts and clamps are correctly torqued and secured. Inspect mechanical components periodically for damage and corrosion.

## Coolant

*Never* remove the filler cap when the engine is hot – escaping steam or scalding water could cause serious personal injury. The coolant level in the expansion tank should be checked at least weekly (more frequently in high mileage or arduous conditions). Always check the level *when the system is cold*. Unscrew the filler cap slowly, allowing the pressure to escape before removing completely. *Never* run the engine without coolant.

Prevent anti-freeze coming in contact with the skin or eyes. If this occurs, rinse immediately with plenty of water. Anti-freeze will damage painted surfaces.

*Never* top-up with salt water. Even when travelling in territories where the water supply contains salt, always ensure you carry a supply of fresh (rain or distilled) water.

## California Proposition 65 Warning

**Do not operate heater in garages or in other closed or unventilated areas.**

**Diesel exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.**

**Electrical components in this product may contain lead, a chemical known to the State of California to cause cancer and birth defects and other reproductive harm.**

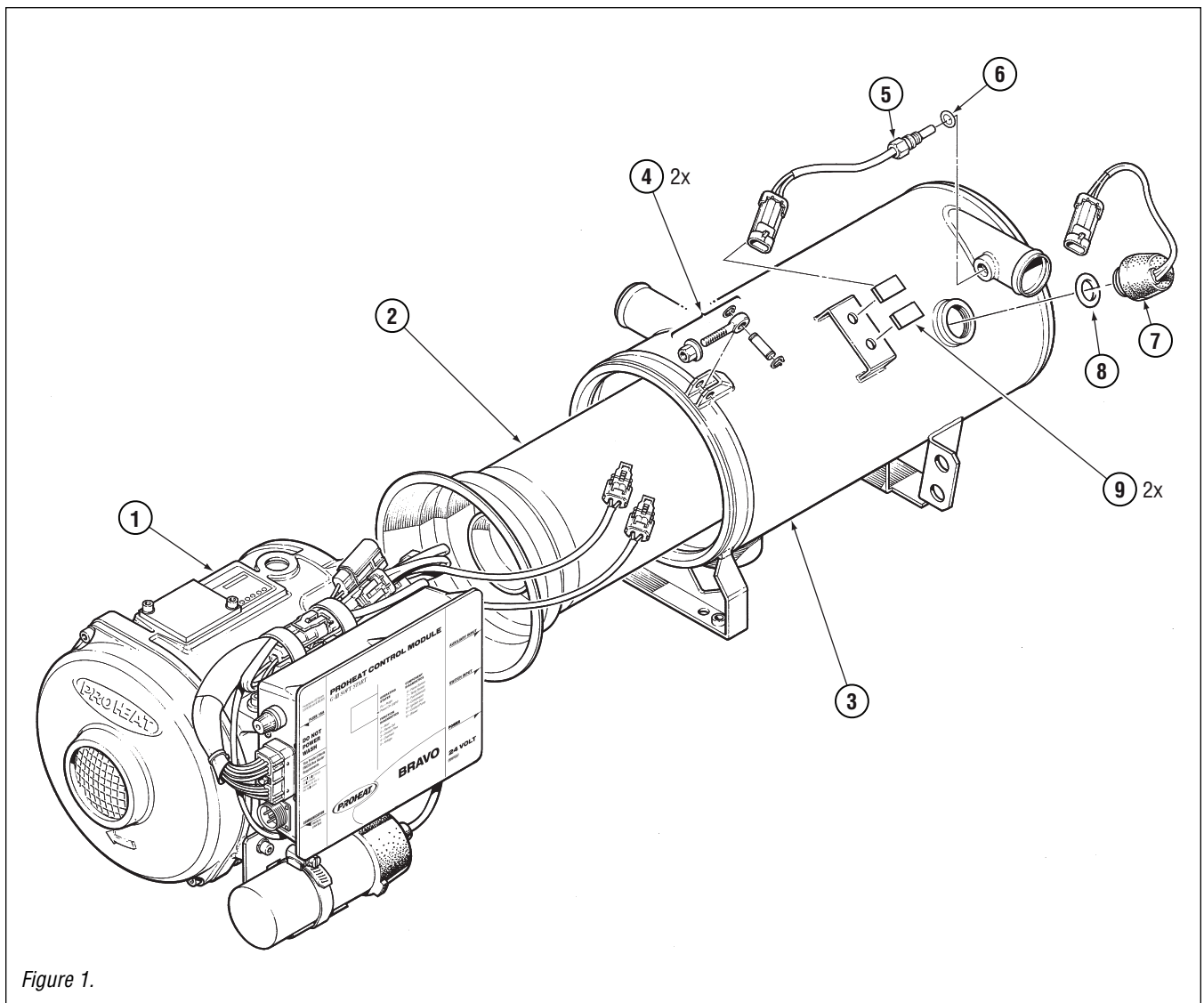


Figure 1.

ITEM	PART#	QTY	DESCRIPTION
1	860121K	1	Burner Head, Bravo 80-24 Volt
2	850321K	1	Combustion Tube, Bravo
3	940350K	1	Heat Exchanger, Bravo 80 c/w Assembled Eye Bolts
4	855830K	2	Eye Bolt Kit, c/w M8 Eye Bolt & Nut, Pin & 2x Retaining Ring
5	901124K	1	Sensor, Temperature c/w O-ring
6	905821K	1	O-ring, Temp Sensor (2/pkg)
7	901021K	1	Sensor, Overheat Breaker c/w O-ring
8	917724K	1	O-ring, Overheat Breaker
9	760827K	2	Clip, Connector (2/pkg)

ITEM	PART#	QTY	DESCRIPTION

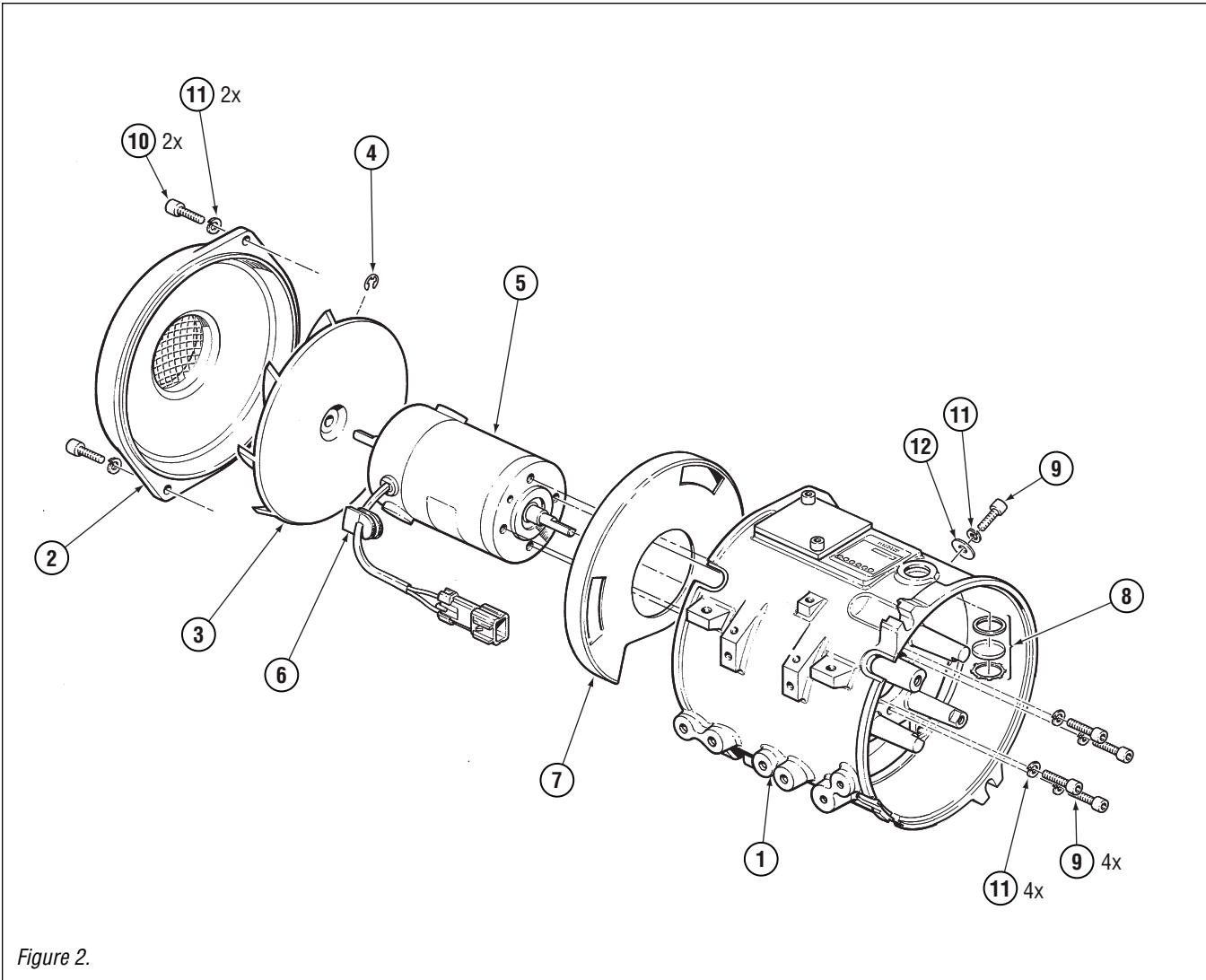


Figure 2.

ITEM	PART#	QTY	DESCRIPTION
1	940252K	1	Casting, Burner head, Bravo 80
2	856324K	1	Cover, Inlet, Bravo 80
3	850045K	1	Fan Blade, c/w Retaining Ring
4	920175K	1	Retaining Ring (3/pkg)
6	858728K	1	Grommet, "D" Style (4/pkg)
7	857026K	1	Baffle, Air Adjust, Bravo 80
8	844721K	1	Sight Glass Kit c/w O-ring, Glass & Retaining Ring
9	850122K	5	Screw, M6 x 1 x 20 mm (10/pkg)
10	850121K	2	Screw, M6 x 1 x 16 mm (4/pkg)
11	850127K	7	Lock Washer, M6 (6/pkg)
12	201429K	1	Washer, 1/4" Flat (8/pkg)

ITEM	PART#	QTY	DESCRIPTION
<b>PRIOR TO MARCH 98 S/N 400900</b>			
5	515431K	1	1 Motor/Fan Kit c/w Retaining Ring
<b>AFTER MARCH 98 S/N 400900</b>			
5	515433K	1	Motor, Bravo 80 – 24V

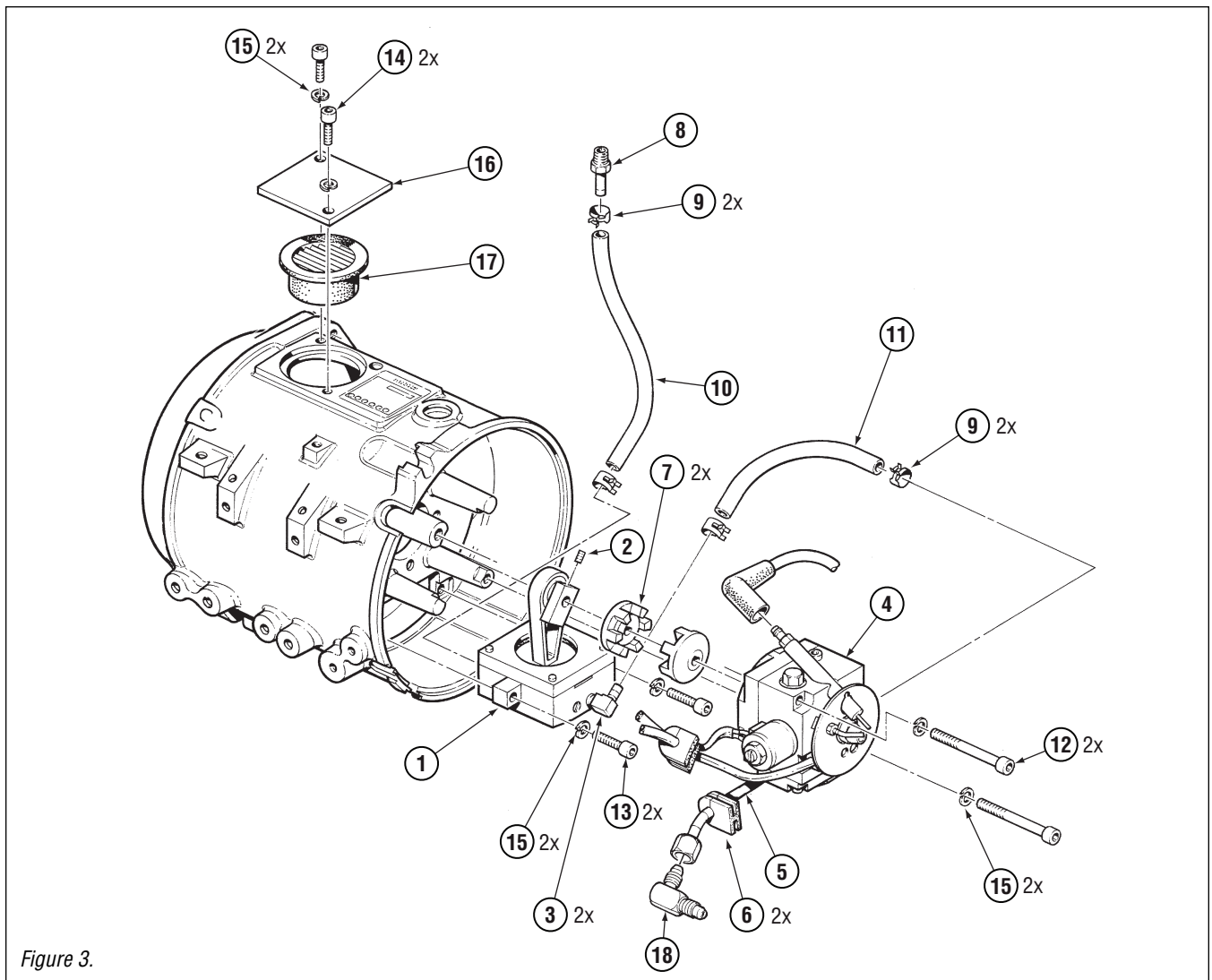


Figure 3.

ITEM	PART#	QTY	DESCRIPTION
1	825100K	1	Compressor, Bravo 80 c/w Fittings and Setscrew
	910123K	1	Compressor, Diaphragm Replacement Kit (Not Shown)
2	982225K	1	Setscrew, #10-32 x 3/8" (2/pkg)
3	842123K	2	Fitting, Elbow, Air Hose x 1/8" NPT-M
4	850226K	1	Fuel Delivery Unit (FDU) Bravo 80-24 Volt
5	940153K	1	Fuel Tube Assembly, Bravo 80
6	858728K	2	Grommet, "D" Style (4/pkg)
7	940732K	2	Coupling, 5/16 Flat (2/pkg)
8	937220K	1	Fitting, 1/4 ID Hose x 1/8 NPTM
9	840429K	4	Clamp, Spring, Air Hose
10	842020K	10'	Hose, Compressor Inlet (5'/pkg)
11	842020K	7'	Hose, Compressor Outlet (5'/pkg)
12	850123K	2	Screw, M6 x 1 x 60mm (4/pkg)

ITEM	PART#	QTY	DESCRIPTION
13	850122K	2	Screw, M6 x 1 x 20 mm (10/pkg)
14	850233K	2	Screw, M6 x 1 x 16mm (4/pkg)
15	850127K	6	Lock Washer, M6 (6/pkg)
16	854825K	1	Cover, Filter, Bravo 80
17	953420K	1	Filter, Air, Element
18	870123K	1	Ftg, Elbow, 1/4 JIC M Union

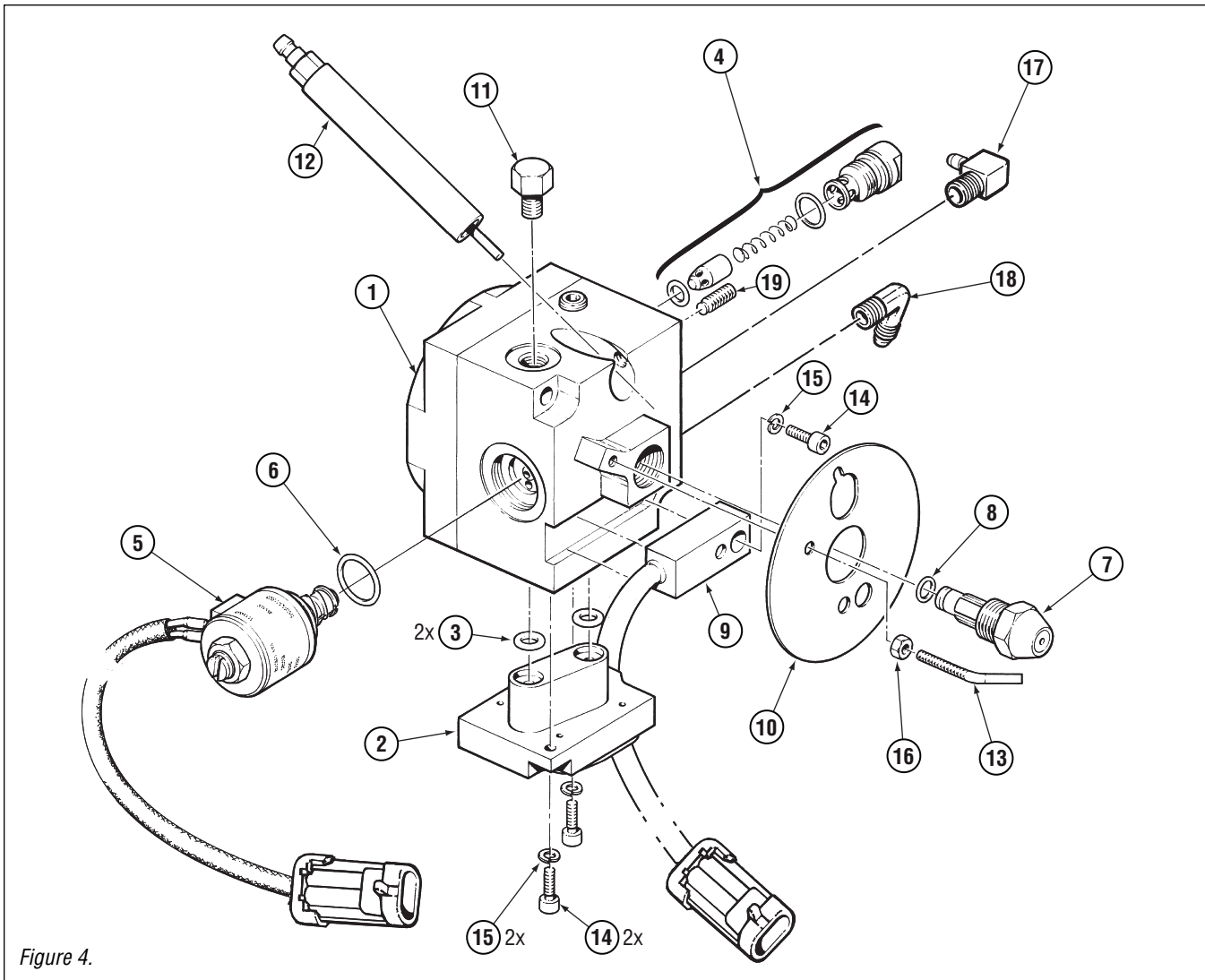
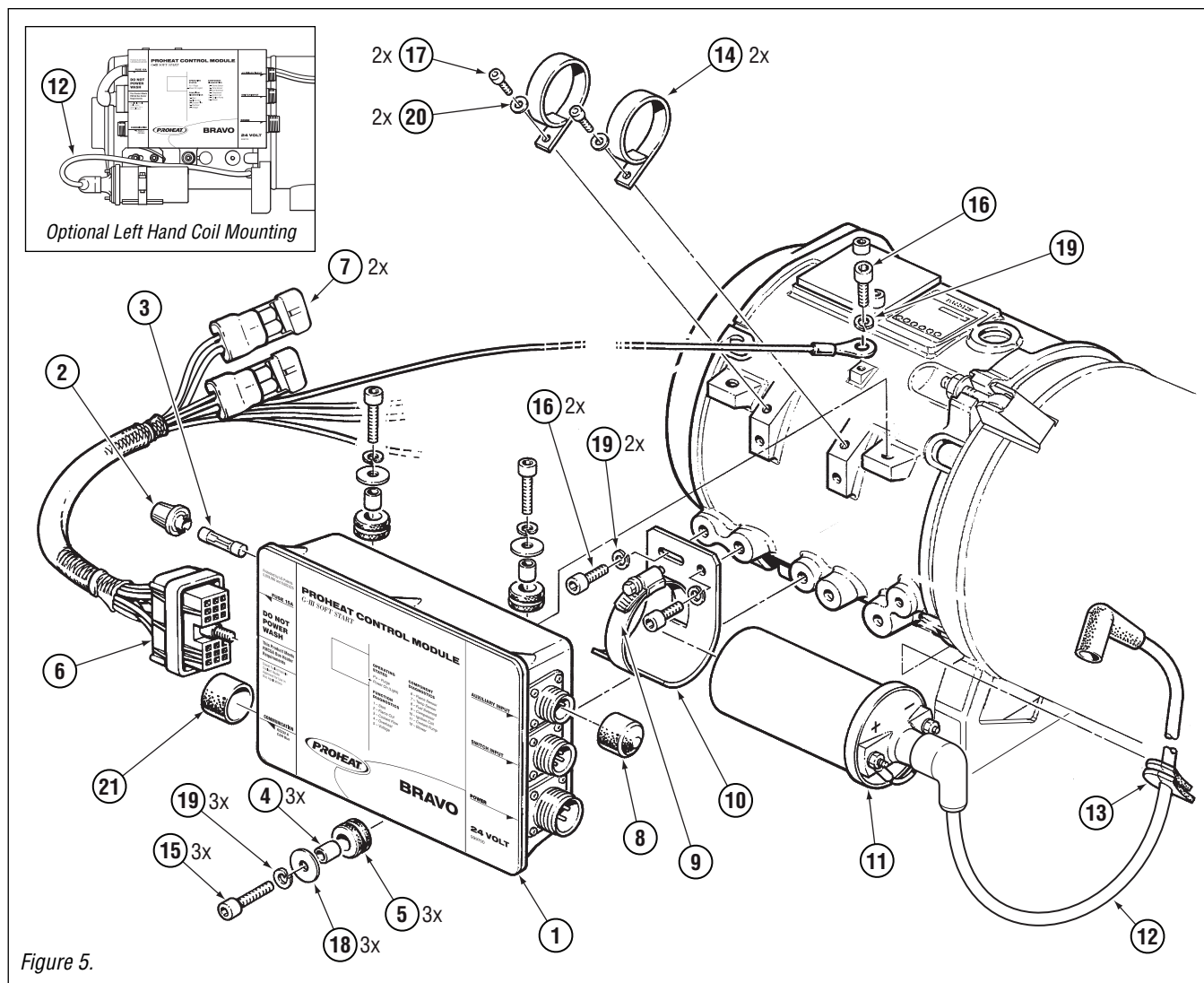


Figure 4.

ITEM	PART#	QTY	DESCRIPTION
1	854925K	1	Fuel Pump, Bravo 80-24 c/w Relief Valve and Fittings
2	859919K	1	Fuel Regulator, Bravo c/w O-rings and Fasteners
3	855321K	2	O-Ring, Regulator (2/pkg)
4	852826K	1	Relief Valve Kit, Bravo Includes: Relief Body, O-rings, Spring & Poppet
5	855123K	1	Valve, Solenoid, 24 Volt c/w O-ring
6	014427K	1	O-ring, Solenoid
7	854421K	1	Nozzle, #30609-9 c/w O-ring
8	221442K	1	O-ring, Nozzle
9	855227K	1	Sensor, Flame, Bravo
10	854121K	1	Flame Shield, Bravo
11	829325K	1	Ftg, Plug 5/16-24 ORB Hex
12	854920K	1	Electrode, Spark, c/w Insert (not shown) and Set Screw item 19

ITEM	PART#	QTY	DESCRIPTION
13	855020K	1	Electrode, Ground c/w nut item 16
14	855528K	3	Screw, M4 x 0.7 x 10mm (10/pkg)
15	850128K	3	Lock Washer, M4 (10/pkg)
16	854922K	1	Nut, M4 x 0.7 (10/pkg)
17	842123K	1	Ftg, Elbow, 1/4 ID Hose x 1/8 NTPM
18	850217K	1	Ftg, Elbow, 1/4 ID JIC M x 1/8 NTPM
19		1	Set Screw (Refer to item 12)





ITEM	PART#	QTY	DESCRIPTION
1	999700K	1	G-III PCM, Bravo, 24 Volt c/w items 2, 3, 4, 5, 8 & 21 (Replaces 906300K)
2	900001K	1	Fuse Holder Kit c/w Fuse
3	921823K	1	Fuse, 15 Amp (3/pkg)
4	842528K	3	Spacer, PCM (3/pkg)
5	905229K	3	Grommet, PCM Mounting (3/pkg)
6	859622K	1	Harness, Main, Bravo
7	982526K	2	Component Substitution Plug
8	931327K	1	Cap, Vinyl, Aux Input
9	334423K	1	Clamp, Gear, #32 SS
10	850113K	1	Bracket "J"
11	913526K	1	Ignition Coil
12	930522K	1	Ignition Lead 18", Coil Right Hand
	930523K	1	Ignition Lead 26", Coil Left Hand
13	858728K	1	Grommet, "D" Style (4/pkg)
14	934626K	2	Clip, Wire (2/pkg)

ITEM	PART#	QTY	DESCRIPTION
15	850122K	3	Screw, M6 x 1 x 20 mm (10/pkg)
16	850233K	3	Screw, M6 x 1 x 16 mm (4/pkg)
17	855528K	2	Screw, M4 x 0.7 x 10 mm (10/pkg)
18	201429K	3	Washer, 1/4" Flat (8/pkg)
19	850127K	6	Lock Washer, M6 (6/pkg)
20	850125K	2	Washer, M4, Flat (10/pkg)
21	931325K	1	Cap, Vinyl, Datalink, G-III PCM only

**NOTE:** For electrical harness connections to PCM see Harness Options

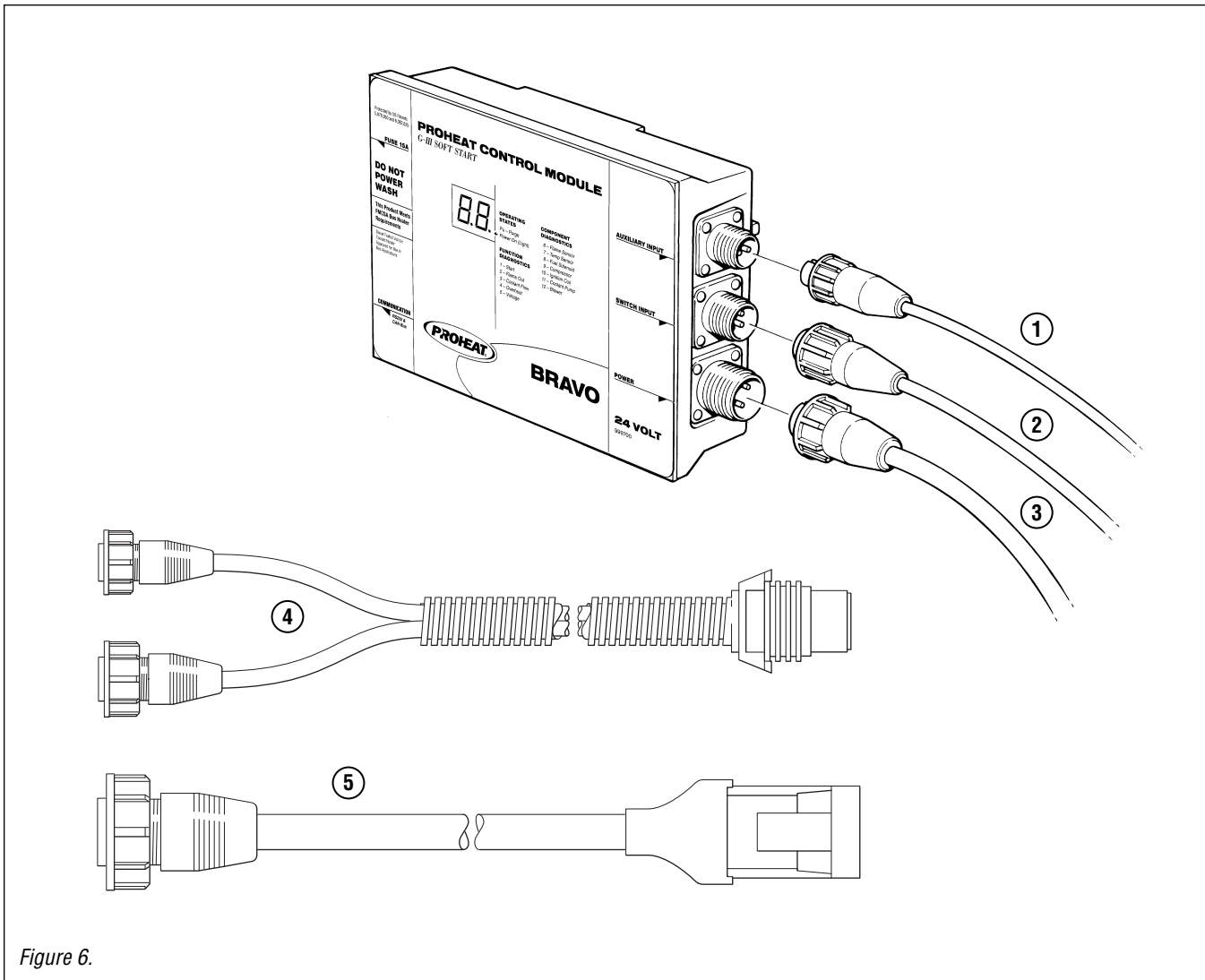


Figure 6.

ITEM	PART#	QTY	DESCRIPTION
1	903026K	-	Harness, Aux Input, 30', 2 Pin
2	903120K	-	Harness, Switch, 25', 4 Pin
3	903223K	-	Harness, Power, 16', 3 Pin
	903224K	-	Harness, Power, 32', 3 Pin (Not Shown)
4	985524K	-	Harness, Transit, Switch/AUX 26"
5	944628K	-	Harness, Transit, Power 26"

ITEM	PART#	QTY	DESCRIPTION
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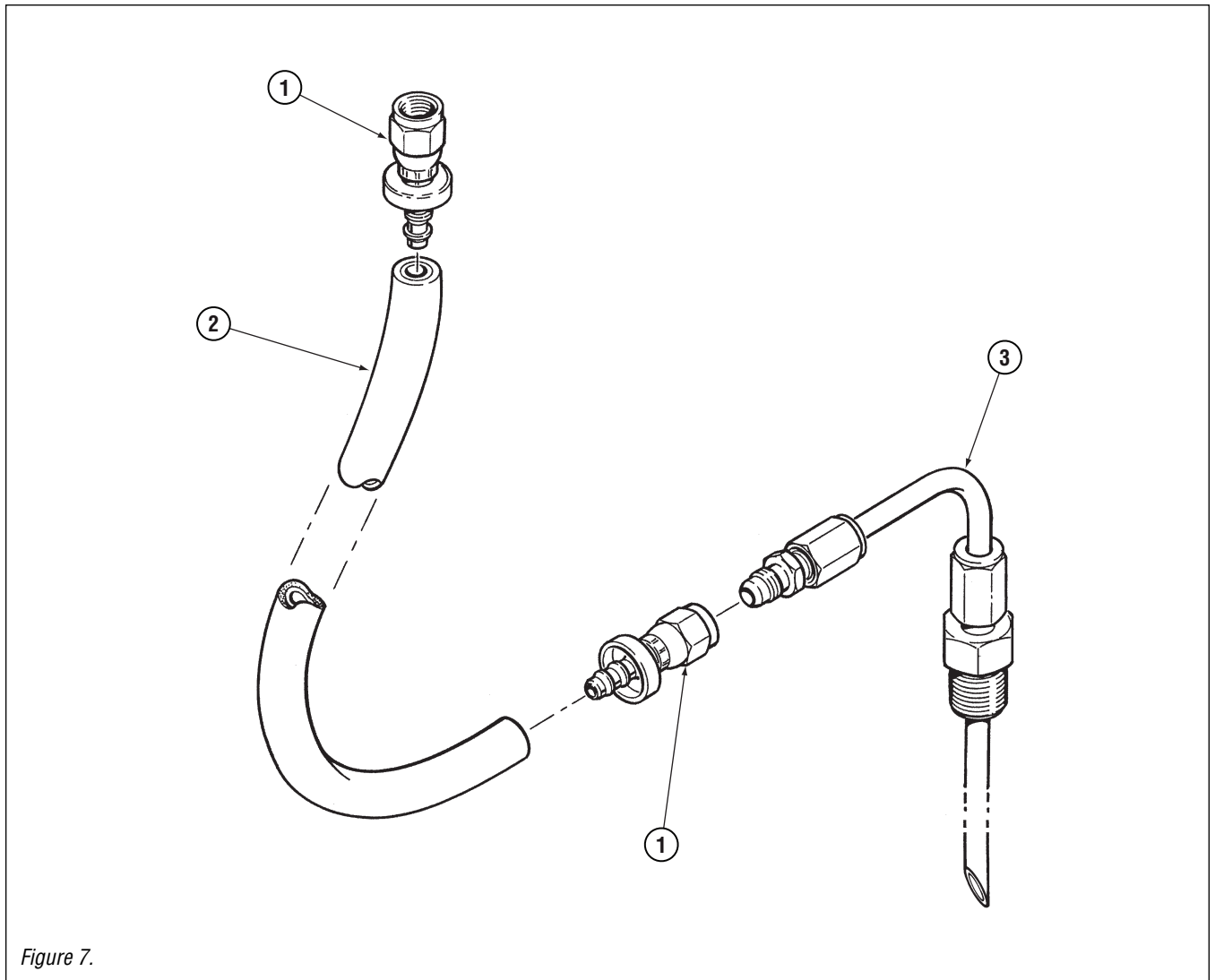


Figure 7.

ITEM	PART#	QTY	DESCRIPTION
1	925173K	2	Ftg, 1/4 JIC M Pushlok
2	960146K	15 ft	Hose, Fuel, 1/4" ID
3	980630K	1	Fuel Pick Up, 28", (No.4 JIC M x 3/8 NPTM)

ITEM	PART#	QTY	DESCRIPTION
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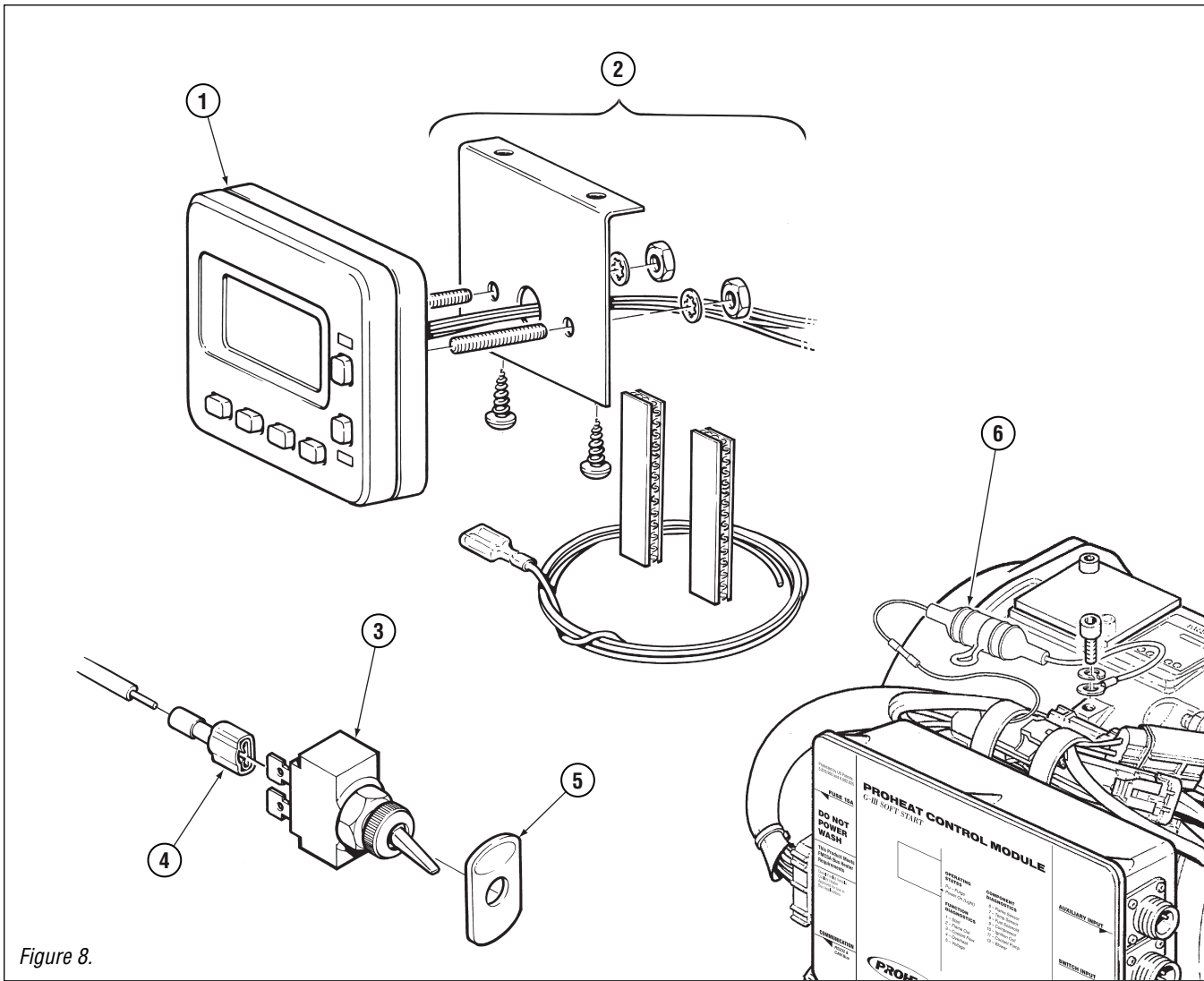


Figure 8.

ITEM	PART#	QTY	DESCRIPTION
1	PK0001-1	1	T-II Timer, 7-day Digital c/w Installation Kit
2	961125K	1	Installation Kit, Timer Kit Contains:
		2	Washer #8
		2	Nut, Hex #8-32
		1	Bracket, Mounting
		2	Screw, #8 x 1/2" Self Tapping
		2	Stud #8-32 x 1" Skt. Hd.
		4	Velcro, Duallock
		1	Wire, Backlight c/w Connector

ITEM	PART#	QTY	DESCRIPTION
3	842725K	1	Switch, On/Off, 24 Volt
4	769125K	4	Connector, 1/4" Female Spade 4/pkg
5	919626K	1	Decal, Toggle Switch
6	PK0310	1	In-Line Fuse, Ground Wire

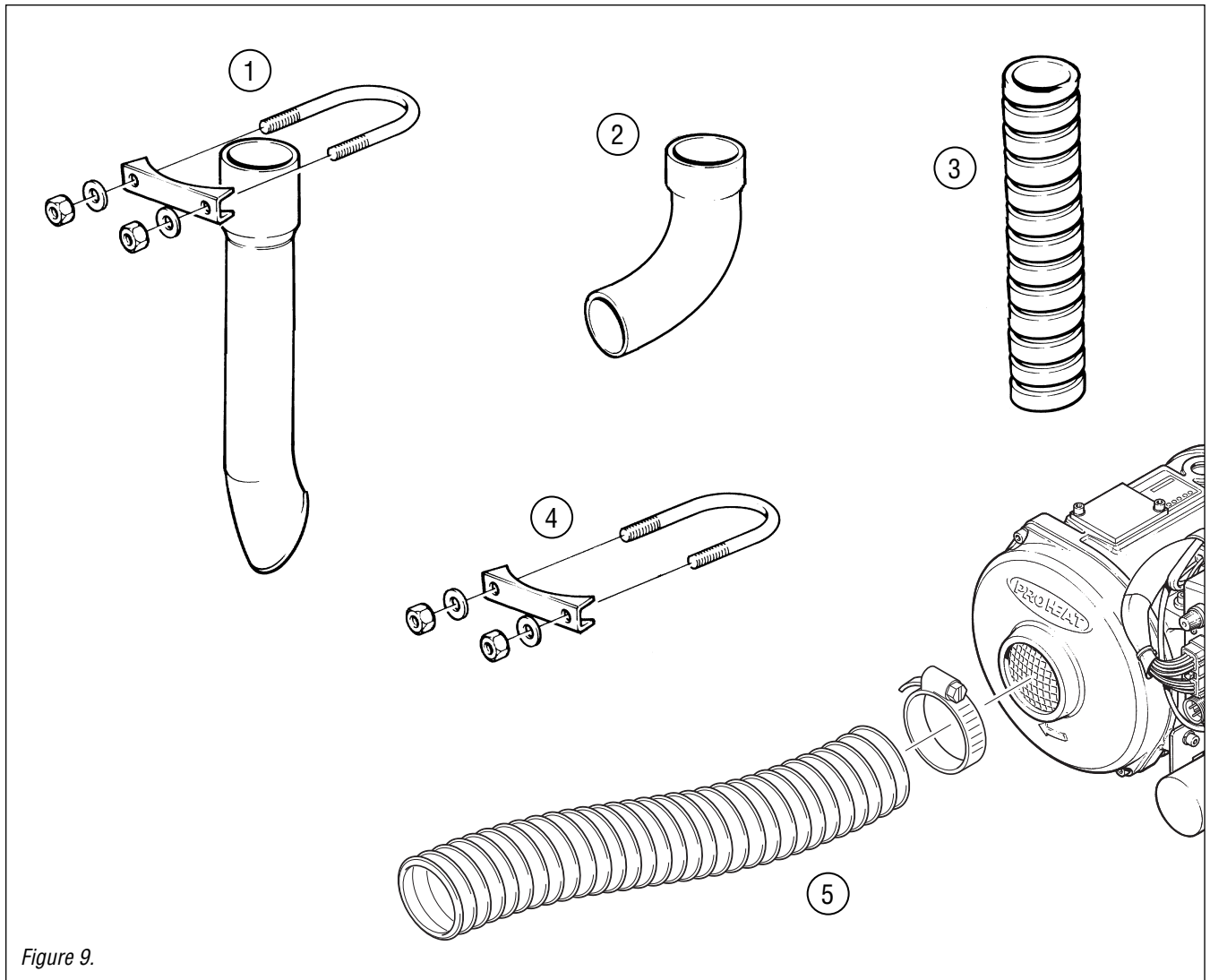


Figure 9.

ITEM	PART#	QTY	DESCRIPTION
1	900645K	1	Exhaust, Pipe, 2.75" ID x 10" c/w Clamp
	980794K	1	Exhaust Pipe (Only), 2.75" ID x 10"
2	900542K	1	Exhaust, Elbow, 2.75" ID to 2.75" OD
3	900528K	1	Exhaust, Flex, 2.75" ID x 12"
4	900879K	1	Clamp, Exhaust, 3.0" ID

ITEM	PART#	QTY	DESCRIPTION
5	PK0316	1	Air Inlet Hose Kit, 3" ID x 5' c/w gear clamp and 6 tie straps

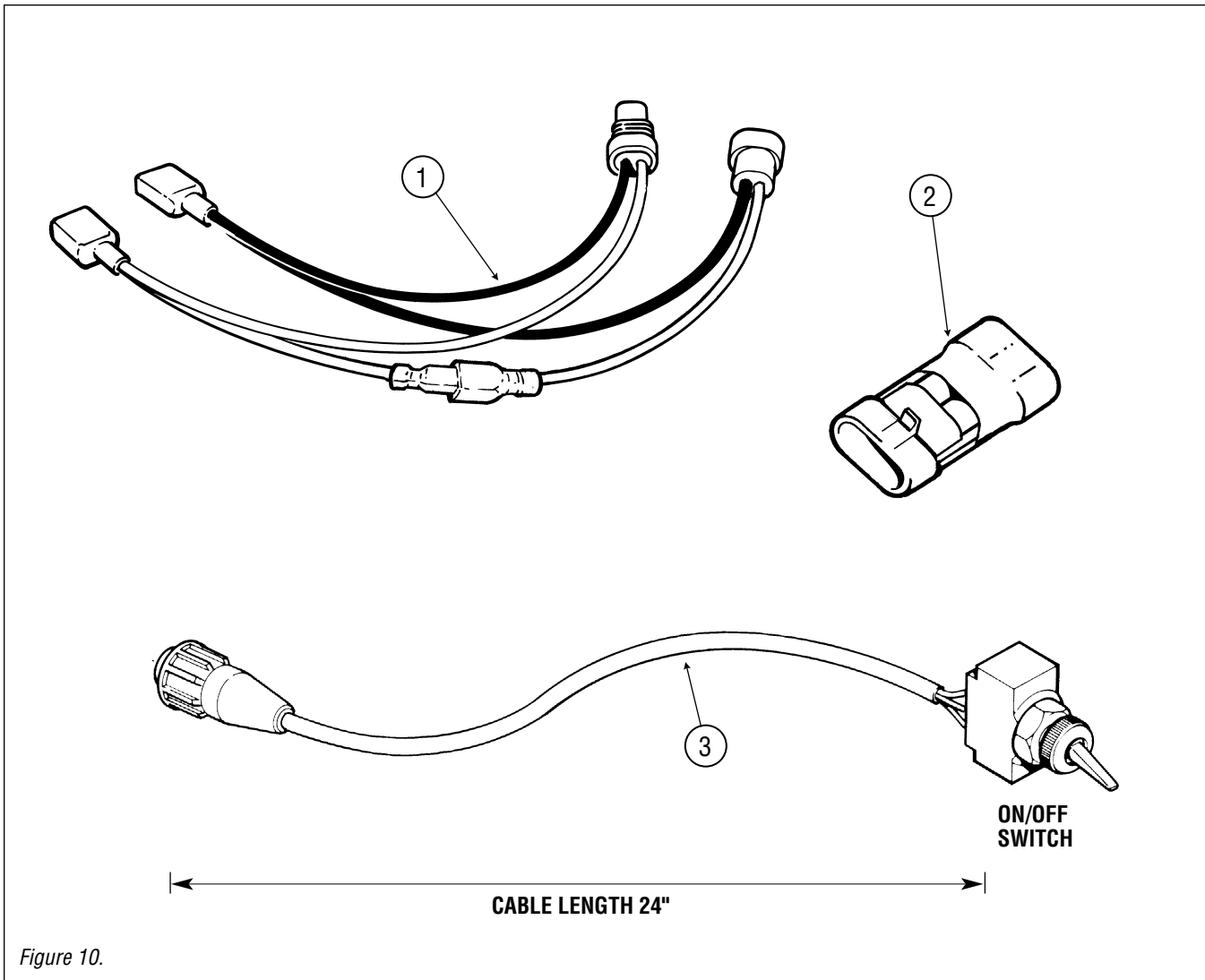


Figure 10.

ITEM	PART#	QTY	DESCRIPTION
1	967632K		Test lead, Blower, Bravo
	967921K		Test Lead, Main Harness
			These leads allow the user to:
			<ul style="list-style-type: none"> <li>• apply power to components from a remote source</li> <li>• check the internal resistance of components</li> <li>• check component voltages using a multimeter</li> <li>• check components amperage using a multimeter.</li> </ul>

ITEM	PART#	QTY	DESCRIPTION
2	982526K	1	Component Substitution Plug This plug can be used in place of a component or to test component or PCM function
3	952925K	1	Switch Lead, Remote On/Off This switch lead allows the user to switch the Proheat ON & OFF at the furnace.

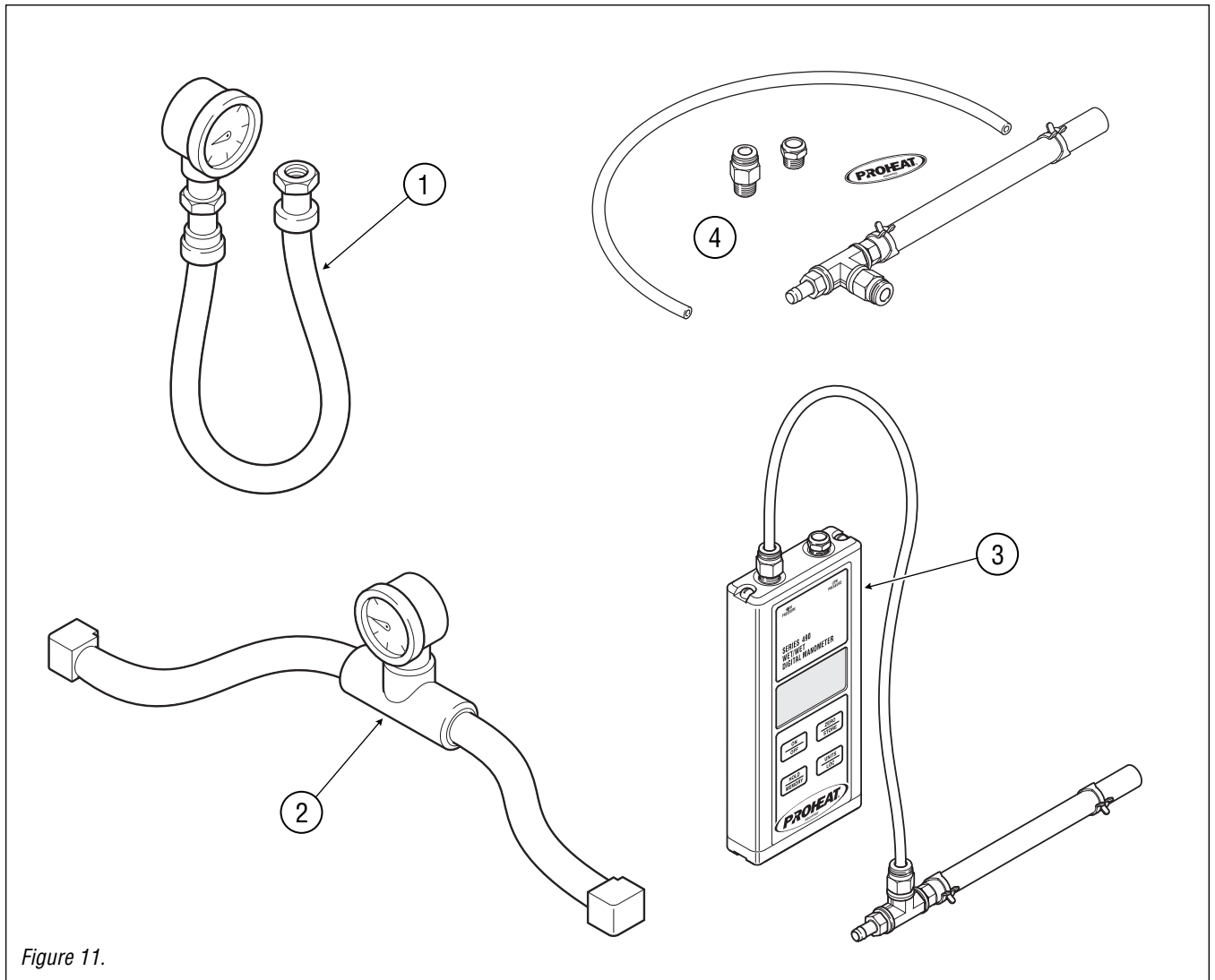


Figure 11.

ITEM	PART#	QTY	DESCRIPTION
1	PK0067	1	Test Gauge, Liquid Filled, Fuel Pump
2	PK0060	1	Test Gauge, Liquid Filled, Compressor
3	PK0037	1	Digital Manometer
4	980037K	1	Replacement Fitting Kit for PK0037

ITEM	PART#	QTY	DESCRIPTION
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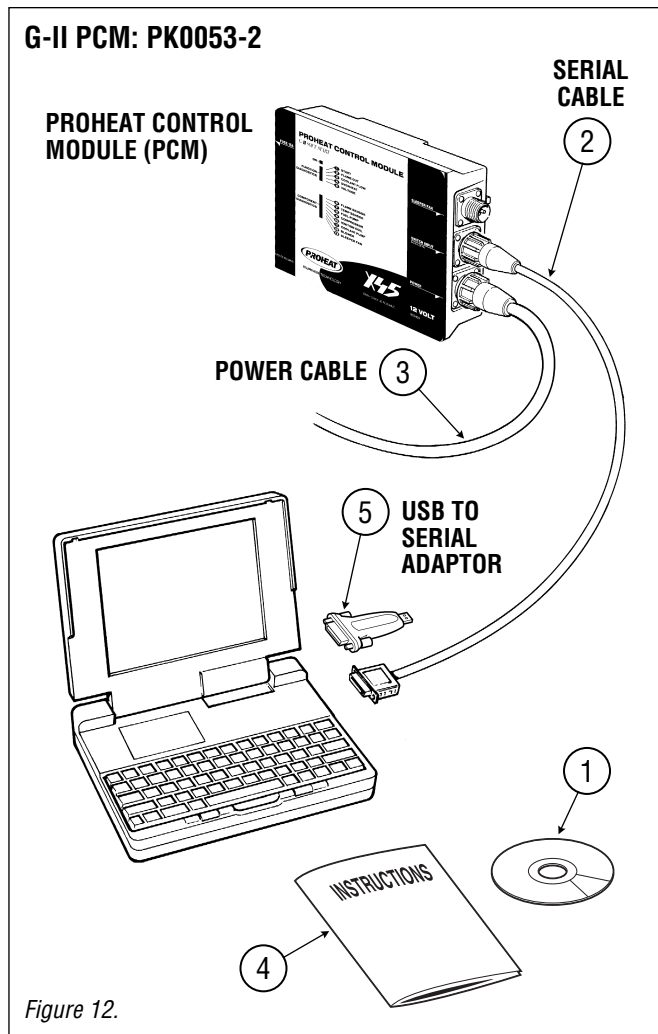


Figure 12.

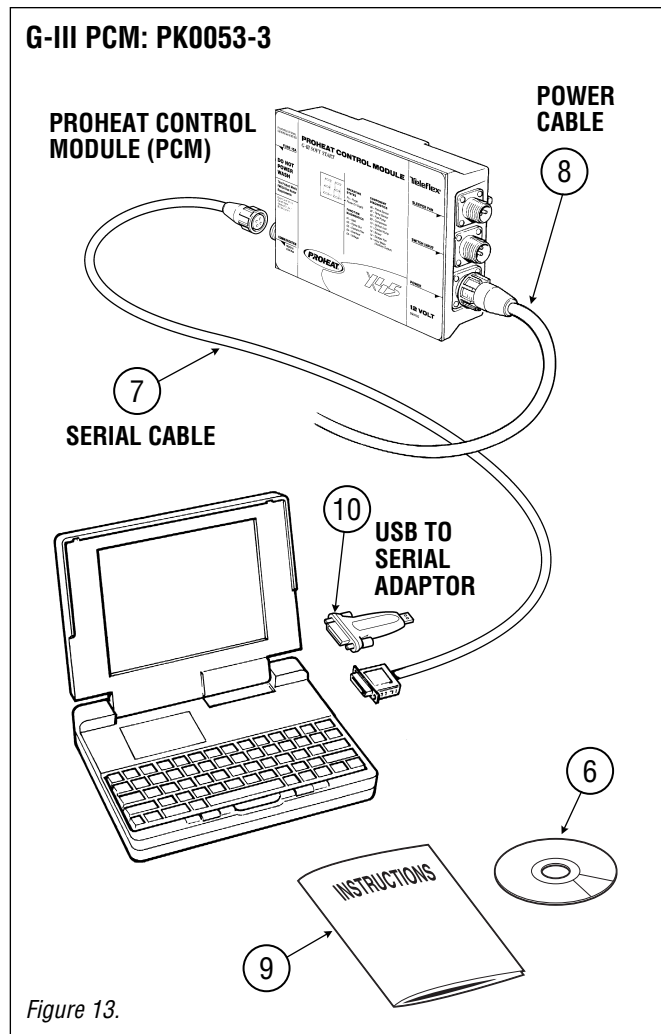


Figure 13.

ITEM	PART#	QTY	DESCRIPTION
	PK0053-2		<b>PROHEAT G-II DATA LINK</b> <i>G-II PCM can be identified by looking at the PCM in Figure 12 above.</i> Allows the user to download information stored in the PCM into a computer for viewing. The information can be used to: a) determine the number of hours the heater has run b) aid in troubleshooting
1	200974K	1	Software, Data Link – CD <i>Available online at <a href="http://www.proheat.com">www.proheat.com</a></i>
2		1	Serial Cable – Connects Computer to Controller (25' long)
3		1	Power Cable (15' long)
4		1	Instructions
5		1	USB to Serial
			<b>Not included:</b>
		1	Computer: IBM Compatible with Serial Port

ITEM	PART#	QTY	DESCRIPTION
	PK0053-3		<b>PROHEAT G-III DATA LINK</b> <i>G-III PCM can be identified by looking at the PCM in Figure 13 above.</i> Allows the user to download information stored in the PCM into a computer for viewing. The information can be used to: a) determine the number of hours the heater has run b) aid in troubleshooting
6	200976K	1	Software, Data Link – CD <i>Available online at <a href="http://www.proheat.com">www.proheat.com</a></i>
7		1	Serial Cable – Connects Computer to Controller (25' long)
8		1	Power Cable (15' long)
9		1	Instructions
10		1	USB to Serial
			<b>Not included:</b>
		1	Computer: IBM Compatible with Serial Port



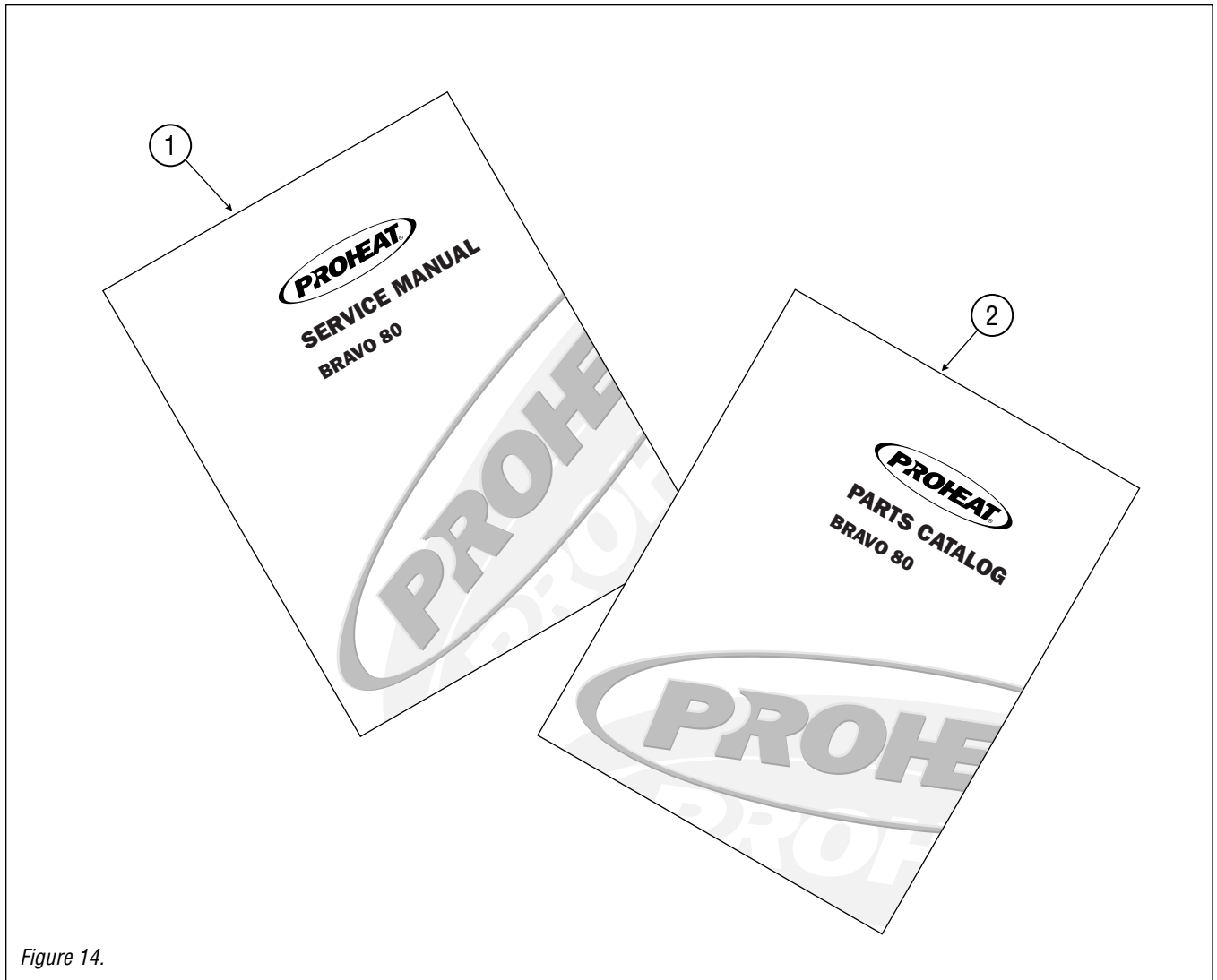


Figure 14.

ITEM	PART#	QTY	DESCRIPTION
1	910112K	1	Service Manual, Bravo 80 <i>Available in electronic format ONLY</i>
2	SL9053	1	Service Parts Catalog, Bravo 80 <i>Available in electronic format ONLY</i>

ITEM	PART#	QTY	DESCRIPTION
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<b>PART#</b>	<b>Catalog Description</b>	<b>PAGE#</b>	<b>PART#</b>	<b>Catalog Description</b>	<b>PAGE#</b>
014427K	O-ring, Solenoid.....	6	856324K	Cover, Inlet, Bravo 80 .....	4
200974K	Software, Data Link – CD .....	14	857026K	Baffle, Air Adjust, Bravo 80 .....	4
200976K	Software, Data Link – CD .....	14	858728K	Grommet, "D" Style (4/pkg).....	4, 5, 7
201429K	"Washer, 1/4" Flat (8/pkg)" .....	4, 7	859622K	Harness, Main, Bravo.....	7
221442K	O-ring, Nozzle .....	6	859919K	Fuel Regulator, Bravo c/w O-rings and Fasteners .....	6
334423K	Clamp, Gear, #32 SS.....	7	860121K	Burner Head, Bravo 80-24 Volt .....	3
515431K	1 Motor/Fan Kit c/w Retaining Ring .....	4	870123K	Ftg, Elbow, 1/4 JIC M Union .....	5
515433K	Motor, Bravo 80 – 24V.....	4	900001K	Fuse Holder Kit c/w Fuse.....	7
760827K	Clip, Connector (2/pkg).....	3	900528K	Exhaust, Flex, 2.75" ID x 12".....	11
769125K	Connector, 1/4" Female Spade 4/pkg .....	10	900542K	Exhaust, Elbow, 2.75" ID to 2.75" OD .....	11
825100K	Compressor, Bravo 80 c/w Fittings and Setscrew.....	5	900645K	Exhaust, Pipe, 2.75" ID x 10" c/w Clamp .....	11
829325K	Ftg, Plug 5/16-24 ORB Hex .....	6	900879K	Clamp, Exhaust, 3.0" ID.....	11
840429K	Clamp, Spring, Air Hose.....	5	901021K	Sensor, Overheat Breaker c/w O-ring.....	3
842020K	Hose, Compressor Inlet/Outlet (5/pkg) .....	5	901124K	Sensor, Temperature c/w O-ring.....	3
842123K	Fitting, Elbow, Air Hose x 1/8" NPT-M.....	5, 6	903026K	Harness, Aux Input, 30', 2 Pin .....	8
842528K	Spacer, PCM (3/pkg).....	7	903120K	Harness, Switch, 25', 4 Pin .....	8
842725K	Switch, On/Off, 24 Volt .....	10	903223K	Harness, Power, 16', 3 Pin.....	8
844721K	Sight Glass Kit c/w O-ring, Glass & Retaining Ring ....	4	903224K	Harness, Power, 32', 3 Pin.....	8
850045K	Fan Blade, c/w Retaining Ring.....	4	905229K	Grommet, PCM Mounting (3/pkg) .....	7
850113K	Bracket "J" .....	7	905821K	O-ring, Temp Sensor (2/pkg) .....	3
850121K	Screw, M6 x 1 x 16 mm (4/pkg) .....	4	910112K	Service Manual, Bravo 80 .....	15
850122K	Screw, M6 x 1 x 20 mm (10/pkg) .....	4, 5, 7	910123K	Compressor, Diaphragm Replacement Kit .....	5
850123K	Screw, M6 x 1 x 60mm (4/pkg) .....	5	913526K	Ignition Coil.....	7
850125K	Washer, M4, Flat (10/pkg) .....	7	917724K	O-ring, Overheat Breaker.....	3
850127K	Lock Washer, M6 (6/pkg) .....	4, 5, 7	919626K	Decal, Toggle Switch.....	10
850128K	Lock Washer, M4 (10/pkg) .....	6	920175K	Retaining Ring (3/pkg).....	4
850217K	Ftg, Elbow, 1/4 ID JIC M x 1/8 NTPM.....	6	921823K	Fuse, 15 Amp (3/pkg) .....	7
850226K	Fuel Delivery Unit (FDU) Bravo 80-24 Volt.....	5	925173K	Ftg, 1/4 JIC M Pushlok.....	9
850233K	Screw, M6 x 1 x 16mm (4/pkg) .....	5, 7	930522K	Ignition Lead 18", Coil Right Hand .....	7
850321K	Combustion Tube, Bravo.....	3	930523K	Ignition Lead 26", Coil Left Hand.....	7
852826K	Relief Valve Kit, Bravo .....	6	931325K	Cap, Vinyl, Datalink, G-III PCM only.....	7
854121K	Flame Shield, Bravo .....	6	931327K	Cap, Vinyl, Aux Input.....	7
854421K	Nozzle, #30609-9 c/w O-ring .....	6	934626K	Clip, Wire (2/pkg).....	7
854825K	Cover, Filter, Bravo 80.....	5	937220K	Fitting, 1/4 ID Hose x 1/8 NPTM .....	5
854920K	Electrode, Spark, c/w Insert and Set Screw .....	6	940153K	Fuel Tube Assembly, Bravo 80.....	5
854922K	Nut, M4 x 0.7 (10/pkg).....	6	940252K	Casting, Burner head, Bravo 80 .....	4
854925K	Fuel Pump, Bravo 80-24 c/w Relief Valve and Fittings .....	6	940350K	Heat Exchanger, Bravo 80 c/w Assembled Eye Bolts .....	3
855020K	Electrode, Ground c/w nut item 16.....	6	940732K	Coupling, 5/16 Flat (2/pkg) .....	5
855123K	Valve, Solenoid, 24 Volt c/w O-ring.....	6	944628K	Harness, Transit, Power 26".....	8
855227K	Sensor, Flame, Bravo .....	6	952925K	Switch Lead, Remote On/Off.....	12
855321K	O-Ring, Regulator (2/pkg).....	6	953420K	Filter, Air, Element.....	5
855528K	Screw, M4 x 0.7 x 10mm (10/pkg) .....	6, 7	960146K	Hose, Fuel, 1/4" ID .....	9
855830K	Eye Bolt Kit, c/w M8 Eye Bolt & Nut, Pin and 2x Retaining Ring.....	3	961125K	Installation Kit, Timer.....	10
			967632K	Test lead, Blower, Bravo .....	12

<b>PART#</b>	<b>Catalog Description .....</b>	<b>PAGE#</b>
967921K	Test Lead, Main Harness.....	12
980037K	Replacement Fitting Kit for PK0037 .....	13
980630K	Fuel Pick Up, 28" (No.4 JIC M x 3/8 NPTM) .....	9
980794K	Exhaust Pipe (Only), 2.75" ID x 10" .....	11
982225K	Setscrew, #10-32 x 3/8" (2/pkg).....	5
982526K	Component Substitution Plug .....	7, 12
985524K	Harness, Transit, Switch/AUX 26" .....	8
999700K	G-III PCM, Bravo, 24 Volt .....	7
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