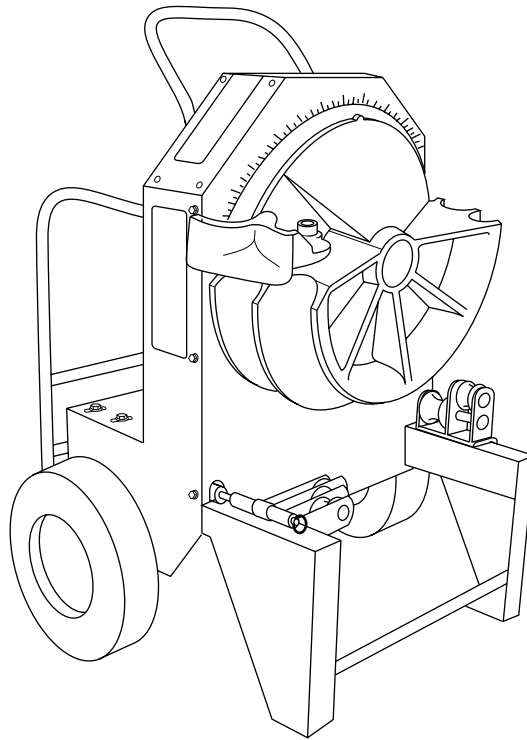


SERVICE MANUAL



555® **Deluxe Electric Bender**

Serial Code ADV



Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

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Safety

Safety is essential in the use and maintenance of Greenlee tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Purpose

This manual is intended to familiarize authorized Greenlee service center personnel with the safe operation and maintenance procedures for the Greenlee 555® Deluxe Electric Bender, with Serial Code ADV.

Keep this manual available to all personnel.

Replacement manuals are available upon request at no charge.

Mobil is a registered trademark of Mobil Oil Corporation.

Other Publications

Instruction Manual: Publication 99937530 (IM 1458)

All specifications are nominal and may change as design improvements occur. Greenlee Textron Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

555 is a registered trademark of Greenlee Textron.

Molex is a registered trademark of Molex Inc.

KEEP THIS MANUAL

IMPORTANT SAFETY INFORMATION



SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

⚠ DANGER

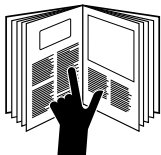
Immediate hazards which, if not avoided, **WILL** result in severe injury or death.

⚠ WARNING

Hazards which, if not avoided, **COULD** result in severe injury or death.

⚠ CAUTION

Hazards or unsafe practices which, if not avoided, **MAY** result in injury or property damage.



⚠ DANGER

Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

Failure to observe this warning will result in severe injury or death.



⚠ DANGER

Do not use this tool in a hazardous environment. Hazards include flammable liquids, gases, or other materials. Using this tool in a hazardous environment can result in a fire or explosion.

Failure to observe this warning will result in severe injury or death.

⚠ WARNING



Electric shock hazard:

- Connect the power cord to a 120 volt, 20 amp receptacle on a ground fault protected circuit only. See Grounding Instructions.
- Do not modify the power cord or plug.
- Inspect the power cord before use. Repair or replace the cord if damaged.
- Disconnect from power before servicing.

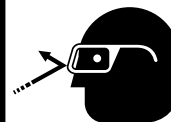
Failure to observe this warning could result in severe injury or death.



⚠ WARNING

- Do not expose to rain.
- Do not use in wet or damp locations.

Failure to observe these warnings could result in severe injury or death.



⚠ WARNING

Wear eye protection when operating or servicing this tool.

Failure to wear eye protection could result in serious eye injury from flying debris.



⚠ WARNING

Do not remove guards.

Failure to observe this warning could result in severe injury or death.

IMPORTANT SAFETY INFORMATION

	⚠ WARNING
	Extension cords: • Use only three-wire, 12-AWG extension cords that have three-prong grounding-type plugs and three-hole receptacles that accept the tool's plug. • Do not use extension cords that are longer than 30 m (100'). • Repair or replace damaged extension cords. Failure to observe these warnings could result in severe injury or death.

⚠ WARNING
Make sure that the handle is properly installed and secured with the safety spring clips and snap pins before lifting or moving the bender. An improperly installed handle could allow the bender to fall, injuring nearby personnel. Failure to observe this warning could result in severe injury or death.

	⚠ WARNING
	Pinch points: Keep hands away from bending shoe, rollers and conduit when bender is in use. Failure to observe this warning could result in severe injury or death.

⚠ WARNING
Unplug the bender before changing accessories. Accidental startup could result in serious injury.

⚠ CAUTION
• Conduit moves rapidly as it is bent. The path of the conduit must be clear of obstructions. Be sure clearance is adequate before starting the bend. • Do not operate the bender while wearing loose clothing. Loose clothing can get caught in moving parts. • Inspect the bender before use. Replace worn, damaged or missing parts with Greenlee replacement parts. A damaged or improperly assembled component could break and strike nearby personnel. • Some bender parts and accessories are heavy and may require more than one person to lift and assemble. • Use only accessories and attachments recommended by Greenlee. • Do not stand on the bender; the bender may tip over. • Do not leave the tool running unattended. Do not leave the tool until it comes to a complete stop. Turn the power off and unplug the tool after use. • Ensure that all bystanders are away from the work area when operating the bender. • Ensure that the work area is clean, dry, uncluttered, and well-lit. • Use this tool for the manufacturer's intended purpose only. Use other than that which is instructed in this manual can result in injury or property damage. Failure to observe these precautions may result in injury or property damage.

Handle Removal and Replacement

The handle of the 555 is designed to be removable. This feature is convenient when performing complex bending, and makes it easy to replace a damaged handle.

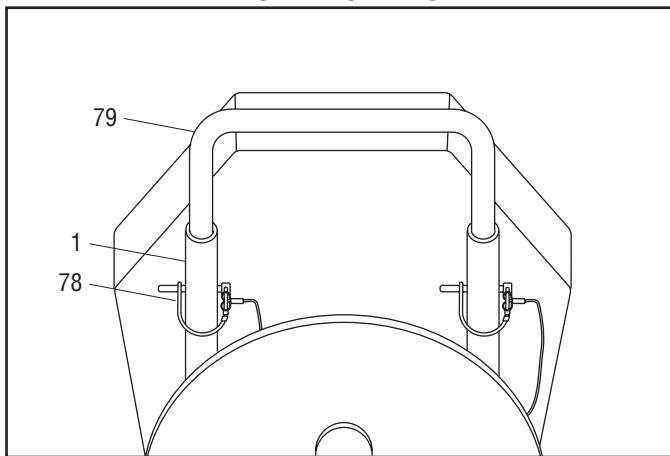
Removal

1. Place the bender in the upright position.
2. Release the spring clip on the safety snap pin (78).
3. Remove the pin from the handle (79) and the sleeve of the frame (1).
4. Repeat Steps 1 through 3 for the other end of the handle.
5. Lift the handle to remove.

Replacement

1. Insert the handle (79) into the sleeves of the frame (1).
2. Align the holes in the handle with the holes in the sleeves.
3. Insert the safety snap pin (78). Ensure that the pin goes through the handle and the sleeve on the frame (1).
4. Engage the safety spring clip over the end of the pin. Ensure that the loop on the clip is completely around the pin.
5. Repeat Steps 2 through 4 for the other end of the handle.

Removing or Replacing Handle



Transportation

⚠ WARNING

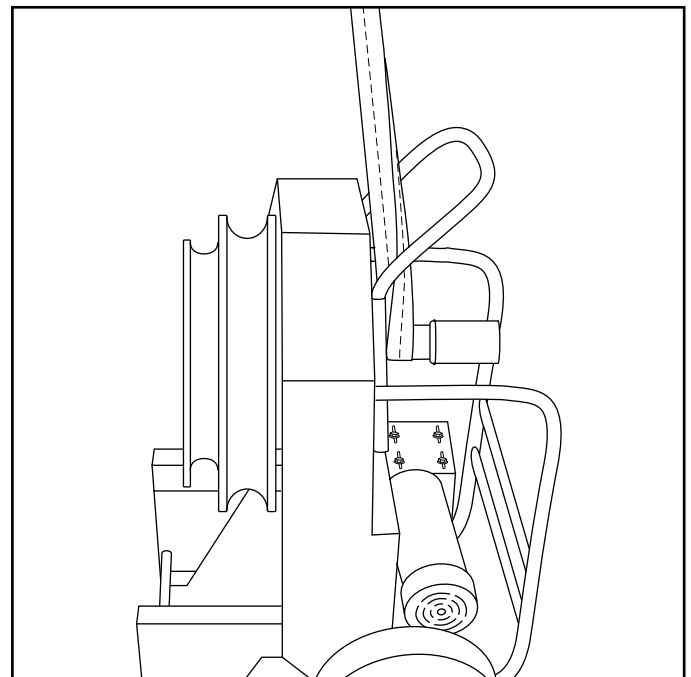
Make sure that the handle is properly installed and secured with the safety spring clips and snap pins before lifting or moving the bender. An improperly installed handle could allow the bender to fall, injuring nearby personnel.

Failure to observe this warning could result in severe injury or death.

The only proper way to lift this bender is by attaching a nylon or polyester sling around the storage spindle. The sling should extend between the handle and main frame of the bender so that the handle acts as a guide for the sling, as shown.

Make sure that all components used to lift this bender are properly rated for the 167 kg (368 lb) weight. Use a ramp to load and unload from a truck or other vehicle that is not equipped with a lift gate.

Transporting Bender



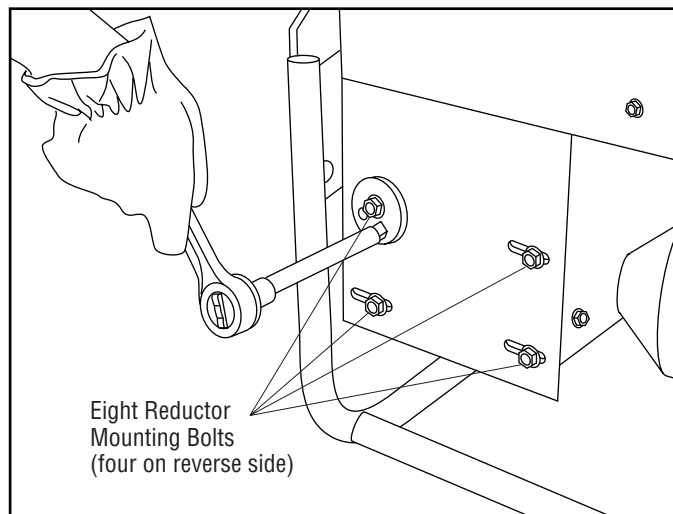
Maintenance

There is no need for periodic flushing and replacing of lube in the bender gear box since it is sealed and locked tight. However, if the box is opened for repair and the lube is lost or contaminated by dirt, then the box and parts should be flushed out and filled with 26 fluid ounces of Mobil® 634 synthetic oil.

Flushing should be accomplished with kerosene, which is a petroleum hydrocarbon that does not affect seals.

Note: Aromatic hydrocarbons such as benzene, chlorinated solvents such as carbon-tetrachloride, and ketones such as acetone should never be used for flushing as they are solvents for rubber. They are also harmful to the environment.

	⚠ WARNING Disconnect this tool when not in use, before servicing or adjusting, and when changing shoes or conduit rollers and supports. Failure to observe this warning could result in severe injury or death.
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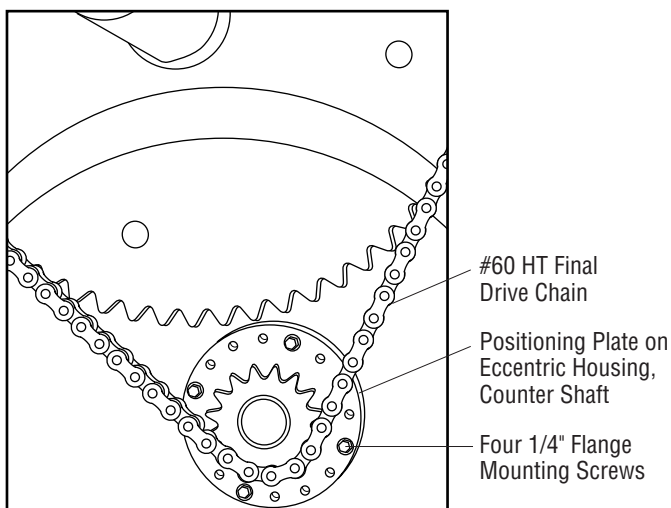
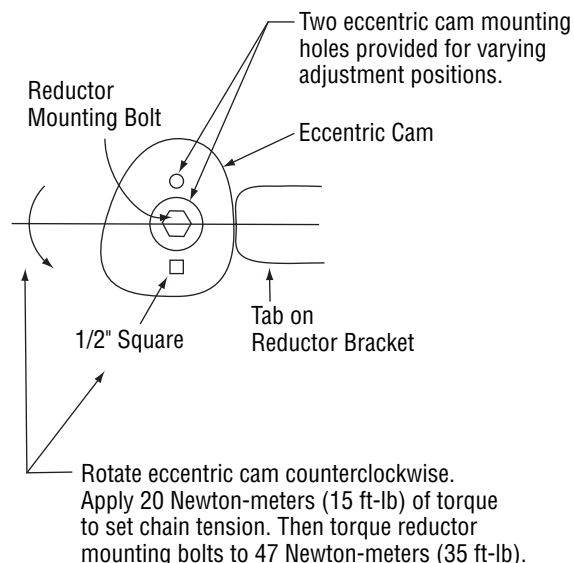


With the eight reductor mounting bolts (22, 24) loose, rotate the eccentric cam with a 1/2" square drive to tension the chain. Torque the eight reductor mounting bolts to 47 Newton-meters (35 ft-lb).

Chain Adjustment

Both chains have to be adjusted if the final drive #60 chain is to be reset. Refer to the Exploded View and Parts List.

1. Remove the front cover (38) and upper rear guard (37).
2. Loosen the eight mounting bolts for the reductor (19). Remove the eccentric cam and move the reductor to create chain slack.
3. Remove the four retaining screws for eccentric adjustment. Rotate to remove slack from the chain and align with one of the two sets of holes in the frame. Remount the eccentric with the four bolts.
4. Slide the reductor in slotted mounting holes to the retension chain. Set tension with the eccentric cam.

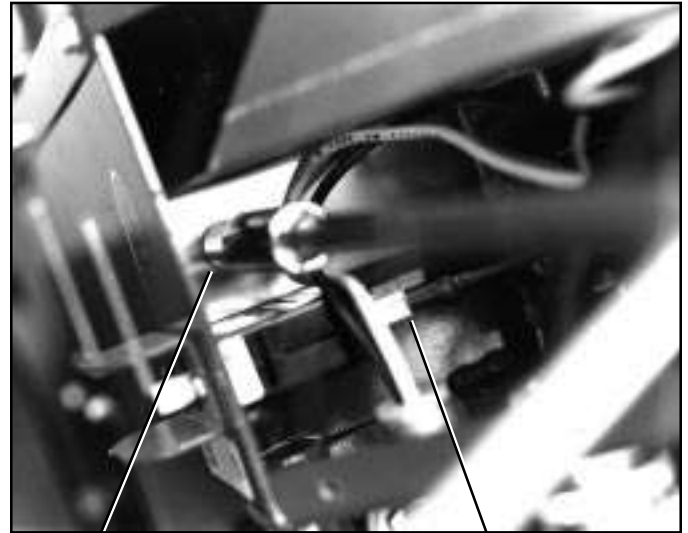


Maintenance (cont'd)

Electrical Control Unit Removal

	⚠ WARNING
Disconnect power supply before servicing bender. Servicing to be done only by trained service technician. Failure to observe this warning could result in severe injury or death.	

1. Remove the cover retained by ten 5/16" hex screws.
2. Disconnect the pendant switch plug from the circuit board and remove through the cord grip.
3. Remove two hex mounting screws, one on each side.



3/8" Hex
Mounting Screw

Line Connection
at Circuit Breaker

4. Remove the motor leads, power cord ground wire, and neutral wire before the control unit can be totally removed from the bender.

Troubleshooting

The following flow charts show the suggested troubleshooting procedures for some bender problems. They by no means encompass all possible problems or solutions.



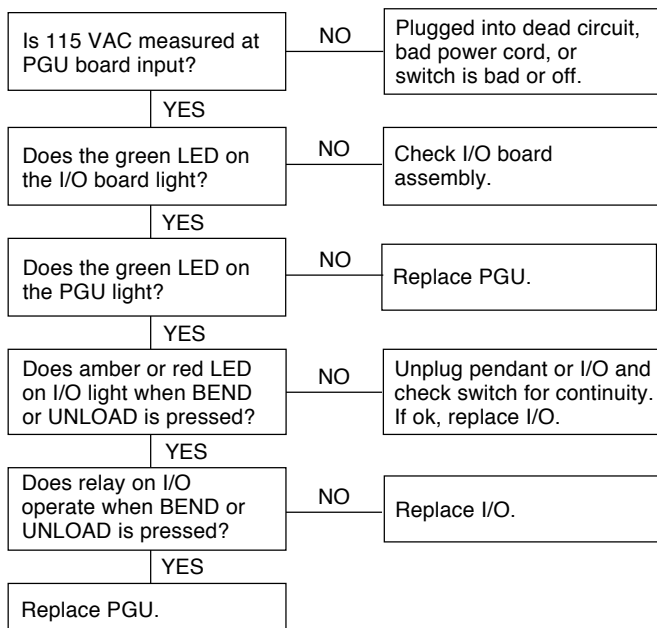
⚠ WARNING

Electric shock hazard:

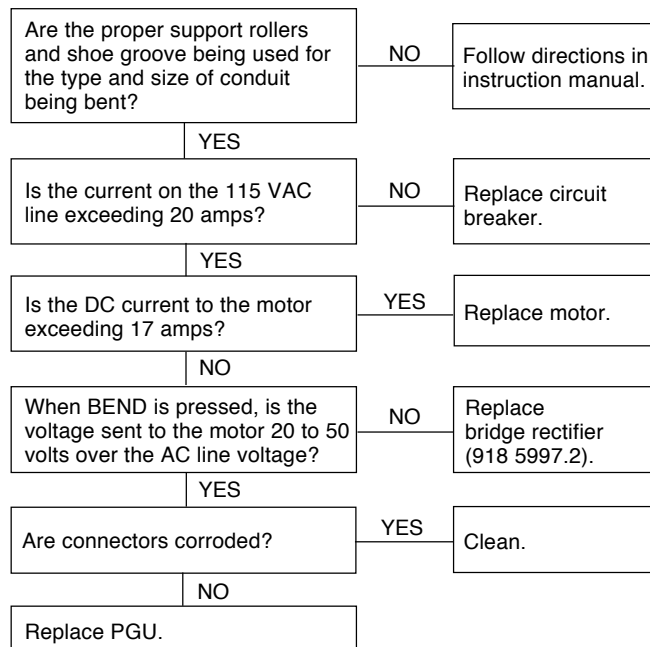
- Contact with live circuits can result in severe injury or death.
- Some troubleshooting steps require power to the bender. This type of troubleshooting step should only be performed at authorized Greenlee service centers by personnel who are familiar with safe troubleshooting procedures.

Failure to observe these warnings could result in severe injury or death.

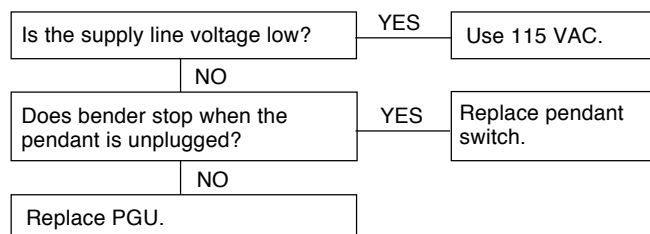
Won't bend



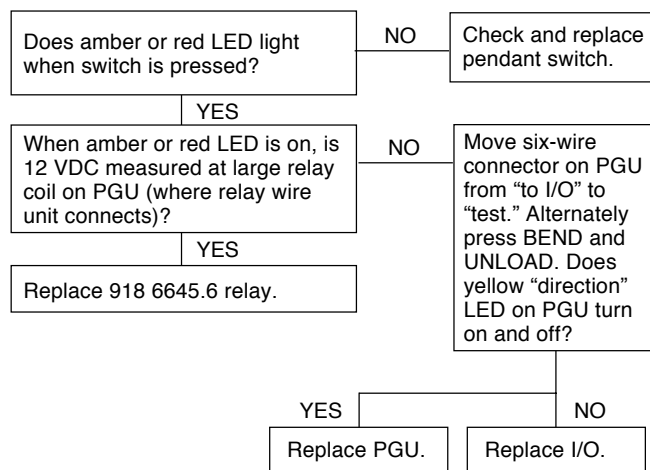
Trips circuit breaker



Won't stop



Bender only runs in one direction



Quick diagnostics for electronic problems

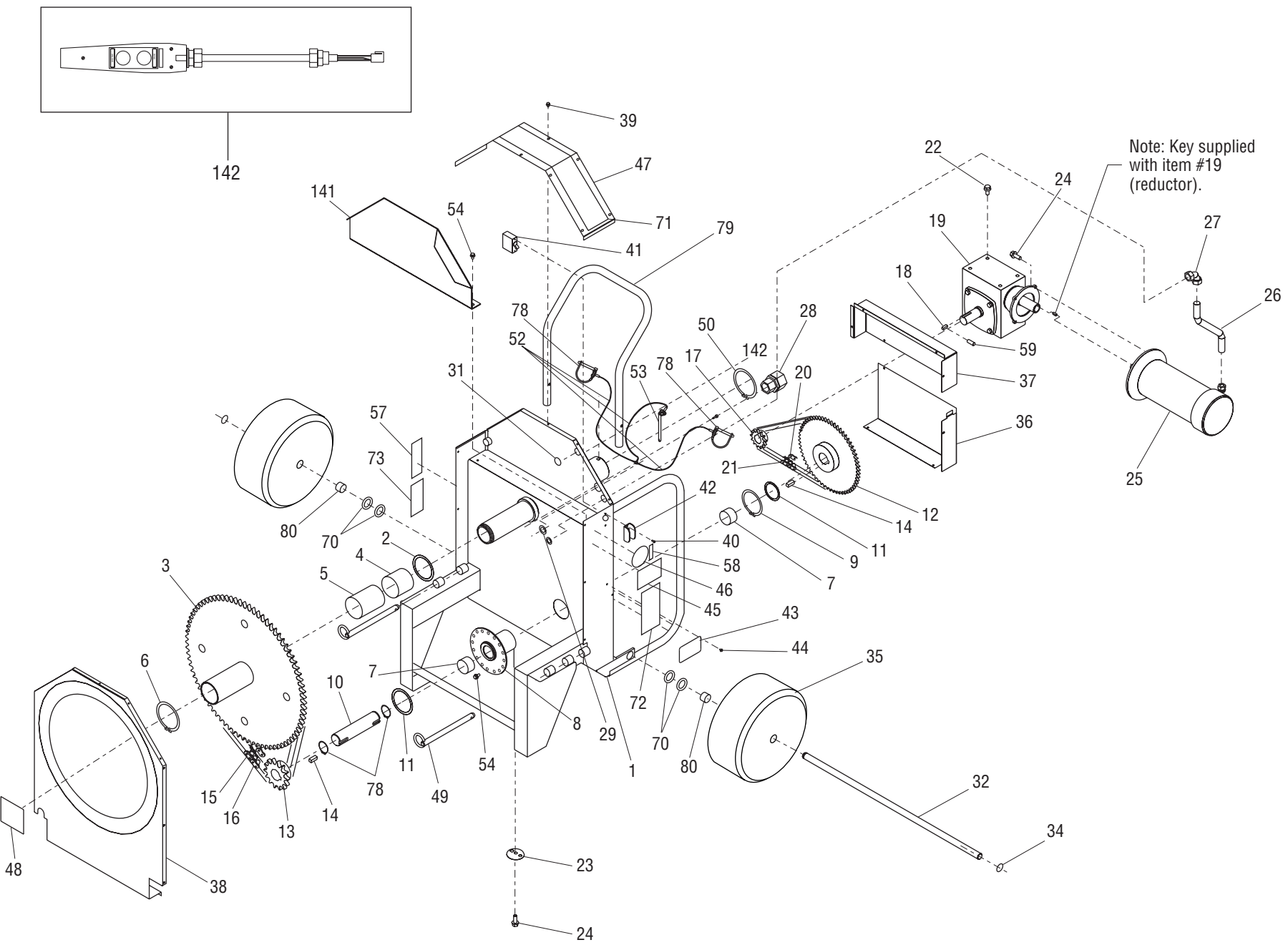
1. With bender unplugged, switch six-wire connector on PGU from “To I/O” to “Test.”
2. Plug unit in.
3. Press BEND. Contactor on I/O will activate.
 - If not, check for 12 VDC at contactor coil
 - If 12 VDC is present, replace contactor 918 6645.6—else replace I/O
 - If bender runs, replace PGU.
 - On PGU near “test” connector:
Green “Power” LED is ON
Yellow “Direction” LED is OFF
Red “PWM” LED slowly turns dimly on
If not, replace I/O.
4. Press UNLOAD. Contactor on I/O will activate.
 - If not, check for 12 VDC at contactor coil
 - If 12 VDC is present, replace contactor 918 6645.6—else replace I/O
 - On PGU near “test” connector:
Green “Power” LED is ON
Yellow “Direction” LED is ON
Red “PWM” LED slowly turns dimly on
If not, replace I/O.
5. Press BEND. With insulated object, carefully press black button “S1” on PGU. Bender will run slowly.
If not, replace PGU.



GREENLEE®

555® Deluxe Electric Bender

Exploded View — 555® Deluxe Electric Bender



Parts List — 555® Deluxe Electric Bender

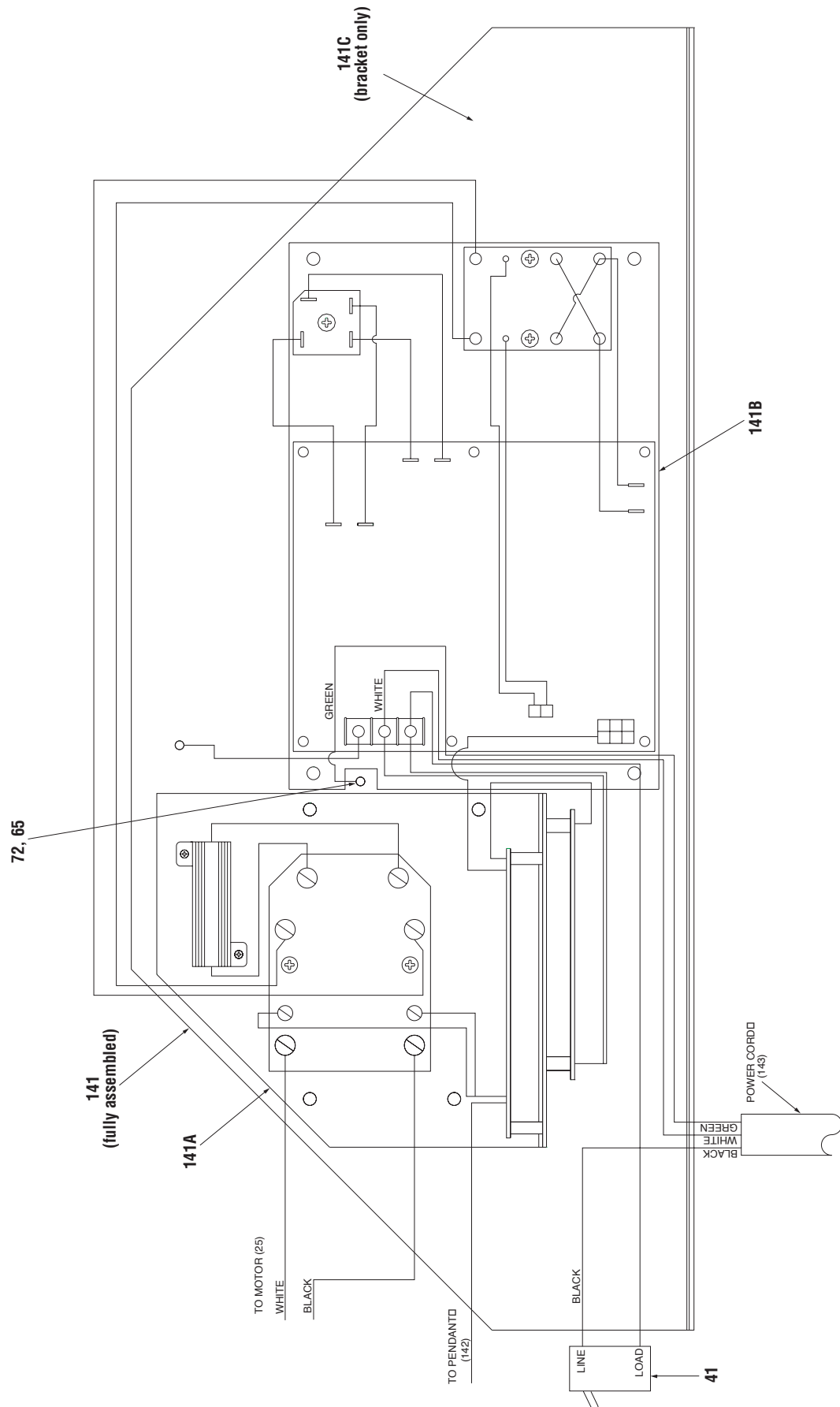
Key	Part No.	Description	Qty.
1	50397427	Weldment, main frame	1
2	50234528	Washer, fiber	1
3	50328964	Weldment, sprocket unit	1
4	90524098	Bearing, Fiberglide ø2.625 x 2.5 long	1
5	90524101	Bearing, Fiberglide ø2.625 x 3.75 long	1
6	90524144	Ring, retaining #5100-237	1
7	90524128	Bearing, Fiberglide ø1.625 x 1.00 long	2
8	50397630	Weldment, countershaft	1
9	90540239	Ring, retaining #5100-250	1
10	50397648	Shaft, counter	1
11	90524136	Bearing, thrust Fiberglide	2
12	90545486	Sprocket, #40 60T	1
13	90542533	Sprocket, #60 14T	1
14	50397656	Key, countershaft	2
15	90545460	Chain, #60 87P	1
16	90542517	Masterlink, #60	1
17	90545478	Sprocket, #40 13T	1
18	50084313	Key, reductor sprocket	1
19	90523881	Reductor, worm gear	1
20	90527879	Masterlink, #40	1
21	90545516	Chain, #40 87P	1
22	90545680	Bolt, 3/8–16 UNC x .75	7
23	50397583	Eccentric	1
24	90542371	Bolt, 3/8–16 UNC x 1.00	5
25	91869730	Motor	1
26	90545494	Conduit, Sealtight	1
27	91852145	Elbow, Sealtight	1
28	91866839	Strain relief	1
29	90511700	Nut, 3/4 conduit lock	1
31	91862639	Nut, 1/2 conduit lock	1
32	50397575	Axle	1
34	90515285	Ring, retaining #5160-75	2
35	90552679	Wheel, urethane-filled	2
36	50397680	Guard, rear lower	1
37	50397699	Guard, rear upper	1
38	50397605	Cover, front	1
39	90516559	Screw, #10–16 x .50 hex head	31
40	90504305	Screw, #6–32 x .375 Phillips	2
41	91863856	Switch	1
42	50297082	Guard, switch	1
43	50259288	Nameplate	1
44	90530012	Rivet, pop 1/8 x 1/8	4



Parts List — 555® Deluxe Electric Bender (cont'd)

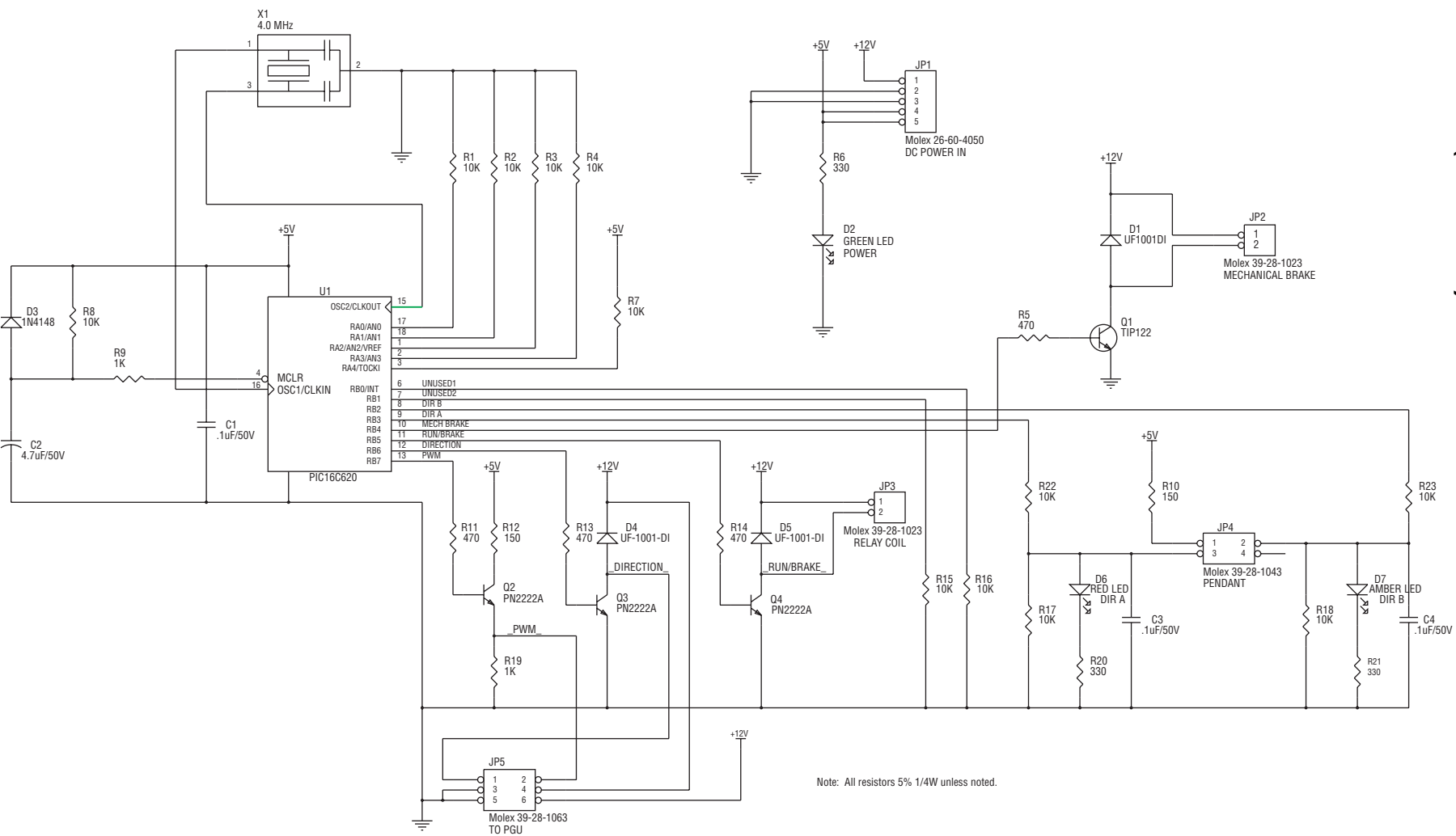
Key	Part No.	Description	Qty.
45	50190539	Decal, voltage	1
46	50303929	Decal, damp warning	1
47	50397591	Cover, top	1
48	50351915	Decal, safety	1
49	90533895	Pin, hitch	2
50	90525019	Ring, retaining #5100-287	1
52	90545524	Lanyard	3
53	90545451	Pin, hitch	1
54	90543351	Screw, 1/4 x .50 thread-forming	6
57	50339370	Decal, squeeze adjust	1
58	50389742	Decal, circuit breaker	1
59	90553233	Pin, Driv-Lok, 1/8 x 1/2	1
70	90517407	Washer, flat (req'd after Nov. 2005) ...	4
		(before Nov. 2005) ...	2
71	50024973	Decal, instruction	1
72	50036386	Decal, warning (English)	1
73	50001124	Decal, warning (French)	1
77	90510518	Ring, retaining #5100-150	2
78	90552687	Pin, safety snap	2
79	50397486	Handle, upper	1
80	50069195	Sleeve, axle	2
141	50078690	Electronic control assembly (fully assembled)	1
141A	50078712	I/O Control assembly	1
141B	50083570	Power generation unit	1
141C	50078674	Bracket, electronics (metal bracket only)	1
142	50078879	Pendant control assembly	1
143	50079123	Power cord assembly	1
144	52023691	Service Kit for 52023601 (no-flat tire and wheel)	1
		<u>consists of:</u>	
		#32 Axle (revised length)	(1) req'd
		#35 No-flat tire and wheel assembly	(2) req'd
		#34 Retaining ring	(2) req'd
		#80 Sleeve, axle	(2) req'd
		#70 Washer	(4) req'd

Electrical Control System Layout





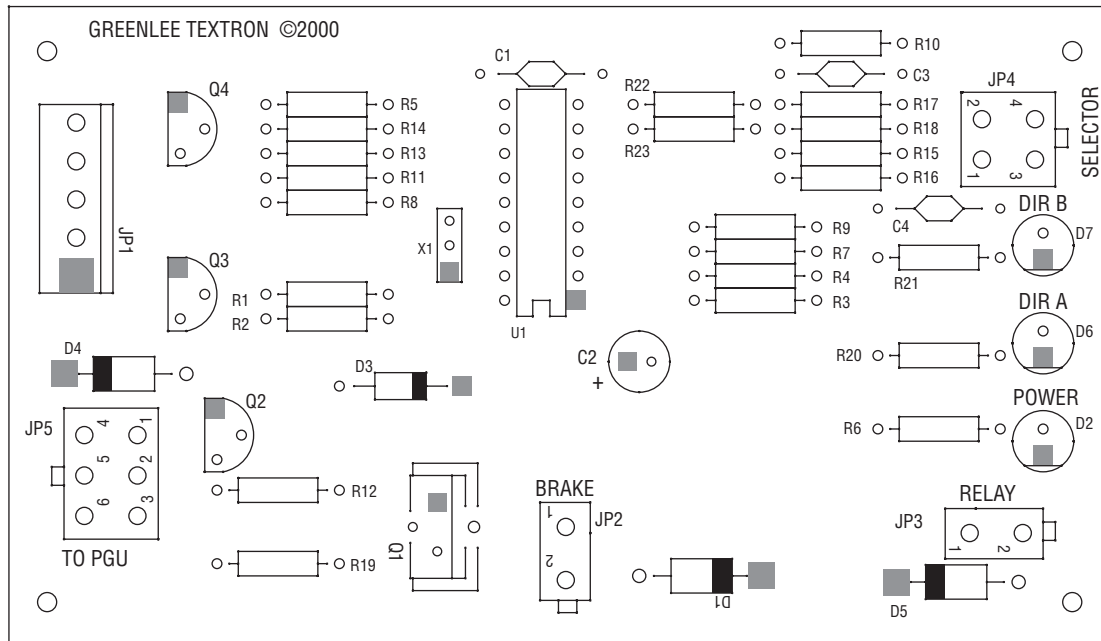
I/O Electrical Schematic (50060180)



I/O Electrical Schematic (50060180) Parts List

Reference	Supplier	Part Number	Description	Qty.
C1,C3,C4	Philips AVX KEMET	A104K29X7RFVWWN SA115C104KAA C420C104K5R5CA	Capacitor, 0.1 uF, 50 volts	3
C2	Panasonic	ECE-A50Z4R7	Capacitor, 4.7 uF, 50 volts	1
D1,D4,D5	Diodes Inc.	UF-1001-DI	Diode, Ultra-Fast Switching Rectifier	3
D2	Panasonic Liteon	LN38GP LTL-4231	LED, T1, Green	1
D3	Generic	1N4148	Diode	1
D6	Panasonic Liteon	LN28RP LTL-4221	LED, T1, Red	1
D7	Panasonic Liteon	LN48YP LTL-4251	LED, T1, Amber	1
JP1	Molex	26-61-4050	Connector, Locking, 0.156" cc, 5-position, Gold	1
JP4	Molex	39-29-0043	Connector, Minifit Jr., 4-position, Gold	1
JP2,JP3	Molex	39-29-0023	Connector, Minifit Jr., 2-position, Gold	2
JP5	Molex	39-29-0063	Connector, Minifit Jr., 6-position, Gold	1
Q1	Generic	TIP122	Transistor, NPN	1
Q1-Heat Sink Hardware	AAVID	577002B04000	Heat Sink, TO-220, .75 x .52 x .25", with Tab	1
	Generic	#4-40 Lock Washer	Stainless Steel, Split Ring or Internal Tooth	1
	Generic	#4-40 Hex Nut	Stainless Steel	1
	Generic	#4-40 Phillips Screw	Stainless Steel, Machine, Pan Head, #4-40 x 0.25"	1
Q2,Q3,Q4	Generic	PN2222A	Transistor, NPN	3
R1,R2,R3,R4,R7,R8,R15, R16,R17,R18,R22,R23	Generic		Resistor, 10K, 1/4 watt, 5%	12
R5,R11,R13,R14	Generic		Resistor, 470 Ω , 1/4 watt, 5%	4
R6,R20,R21	Generic		Resistor, 330 Ω , 1/4 watt, 5%	3
R9,R19	Generic		Resistor, 1 k Ω , 1/4 watt, 5%	2
R10,R12	Generic		Resistor, 150 Ω , 1/4 watt, 5%	2
U1	Greenlee	91869382	Processor, Programmed, 854	1
X1	Murata Panasonic	CST4.00MGW EFO-GC4004A4	Resonator, 4.0 Mhz	1

PCB Layout (50060180)

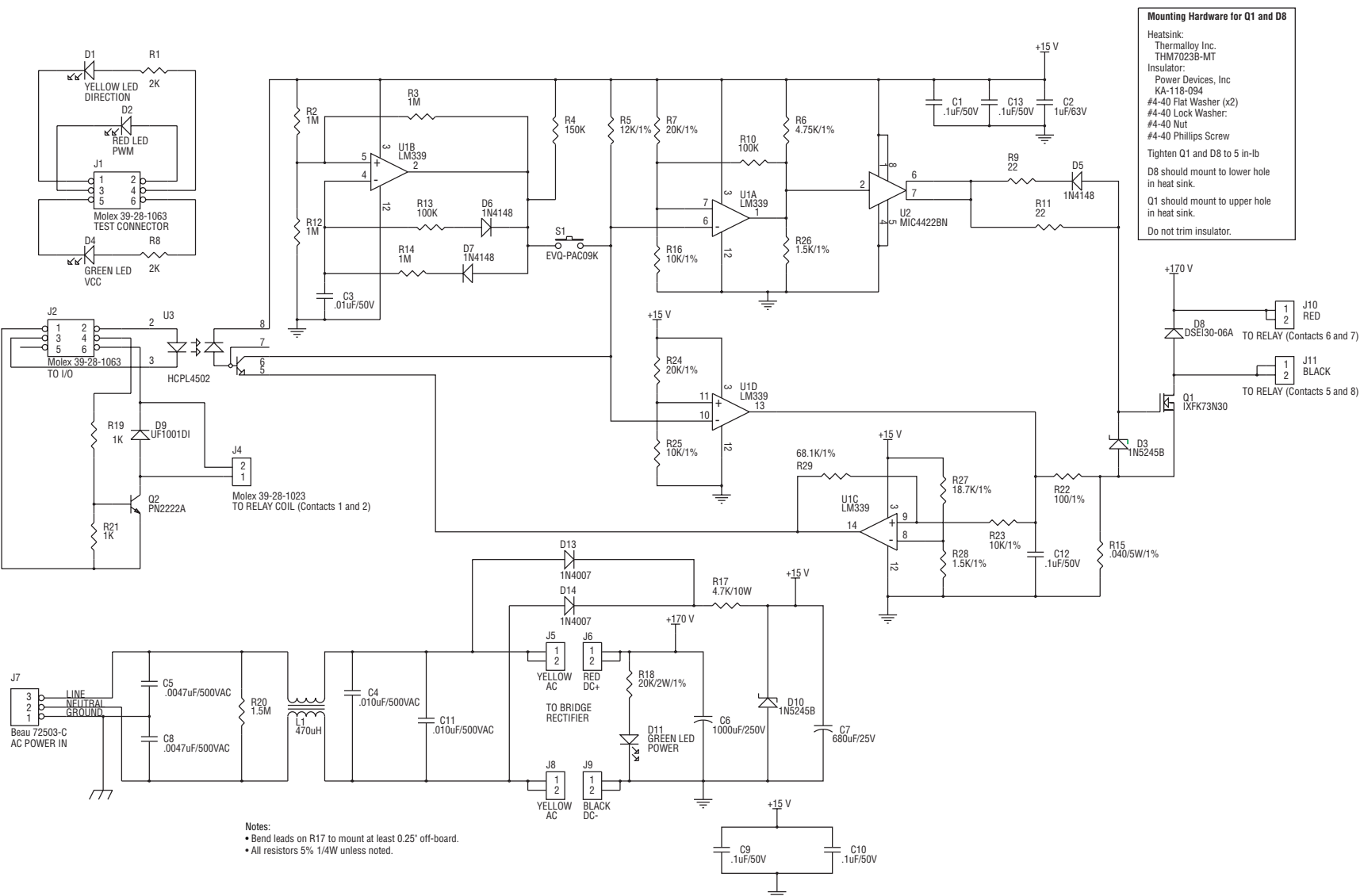




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555® Deluxe Electric Bender

Power Generation Unit Schematic Diagram (50083570)



Power Generation Unit Parts List (50083570)

C1,C9,C10,C12,C13	Philips AVX KEMET	A104K29X7RFVVWN SA115C104KAA C420C104K5R5CA	Capacitor, 0.1 uF, 50 volts	5
C2	WIMA	MKS21.06310	Capacitor, Film, 1 uF, 63 volts	1
C3	Philips AVX	A103M15Z5UFVWWA SA105E103ZAA	Capacitor, .01 uF, 50 volts	1
C4,C11	Sprague	440LS10	Capacitor, .010 uF, 500 volts AC	2
C5,C8	Sprague	440LD47	Capacitor, .0047 uF, 500 volts AC	2
C6	Panasonic Cornell Dubilier	ECE-S2EU102Z 380LX102M250K052	Capacitor, 1000 uF, 250 volts	1
C7	Panasonic	EEU-FC1E681	Capacitor, 680 uF, 25 volts	1
D1	Panasonic Liteon	LN48YP LTL-4251	LED, T1, Amber	1
D2	Panasonic Liteon	LN28RP LTL-4221	LED, T1, Red	1
D3,D10	Motorola	1N5245B	Zener Diode, 15 volts, 500 milliwatts	2
D4,D11	Panasonic Liteon	LN38GP LTL-4231	LED, T1, Green	2
D5,D6,D7	Generic	1N4148	Diode	3
D8	IXYS Adv Pwr Tech Adv Pwr Tech	DSEI 30-06A APT30D40B APT30D60B	Diode, Fast Recovery, 30A, 400-600V, TO-247 (see Note 1)	1
D9	Vishay	UF1001DI	Diode, Ultra-Fast Switching, 1A, 50V, 50ns, DO-41	1
D13,D14	Generic	1N4007	Diode	2
J1,J2	Molex	39-29-0063	Connector, Minifit Jr., 6-position, Gold	2
J4	Molex	39-29-0023	Connector, Minifit Jr., 2-position, Gold	1
J5,J6,J8,J9,J10,J11	Keystone	1287	Connector, Tab, .250 x .032	6
J7	Beau Magnum	72503-C A202203	Connector, Terminal Block, 3-position, No Mount Holes	1
L1	Renco	RL-1328-22-470	Choke, Common Mode	1
Q1	IXYS Adv Pwr Tech	IXFK73N30 APT30M40LVFR	MOSFET, N channel, 73-76A, 300V, TO-264 (see Note 2)	1
Q2	Generic	PN2222A	Transistor, NPN	1
R1,R8	Generic		Resistor, 2 kΩ, 1/4 watt, 5%	2
R2,R3,R12,R14	Generic		Resistor, 1 MΩ, 1/4 watt, 5%	4
R4	Generic		Resistor, 150 kΩ, 1/4 watt, 5%	1
R5	Generic		Resistor, 12.1 kΩ, 1/4 watt, 1%	1
R6	Generic		Resistor, 4.75 kΩ, 1/4 watt, 1%	1
R7,R24	Generic		Resistor, 20 kΩ, 1/4 watt, 1%	2
R9,R11	Generic		Resistor, 22 Ω, 1/4 watt, 5%	2
R10,R13	Generic		Resistor, 100 kΩ, 1/4 watt, 5%	2
R15	Dale KRL Riedon	LVR-5 .04W NP-5A .04W MT-5 .04W	Resistor, .040 Ω, 5 watt, 1%	1
R16,R23,R25	Generic		Resistor, 10 kΩ, 1/4 watt, 1%	3
R17	Dale KRL Riedon	CW-10 4.7K C-10A 4.7K UT-10 4.7K	Resistor, 4.7 kΩ, 10 watt, 5% (see Note 3)	1
R18	Dale KRL Riedon	RS-2B-20K C-2A 20K UT-2B 20K	Resistor, 20 kΩ, 2 watt, 1%	1

Power Generation Unit Parts List (50083570) (cont'd)

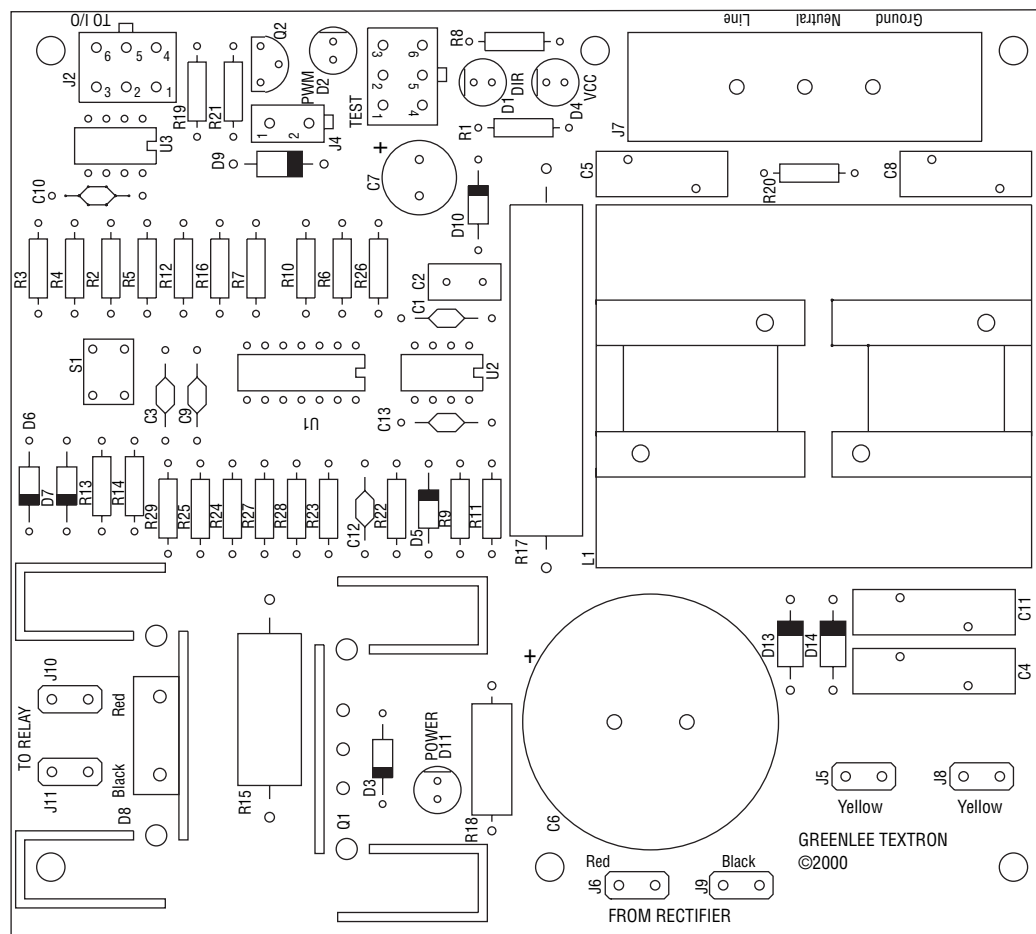
R19,R21	Generic	Resistor, 1 k Ω , 1/4 watt, 5%	2
R20	Generic	Resistor, 1.5 M Ω , 1/4 watt, 5%	1
R22	Generic	Resistor, 100 Ω , 1/4 watt, 1%	1
R26,R28	Generic	Resistor, 1.5 k Ω , 1/4 watt, 1%	2
R27	Generic	Resistor, 18.7 k Ω , 1/4 watt, 1%	1
R29	Generic	Resistor, 68.1 k Ω , 1/4 watt, 1%	1
S1	Panasonic	EVQ-PAC09K	Switch, Momentary Pushbutton
U1	Motorola	LM339AN	IC, Low Power Quad Comparitor
U2	Micrel	MIC4422BN	IC, 9-A Peak Low-Side Non-inverting MOSFET Driver
U3	HP QT-Opto Siemens	HCPL4502 HCPL4502 6N136	IC, Opto-isolator

Note 1: Mount D8 to bottom hole of heat sink.

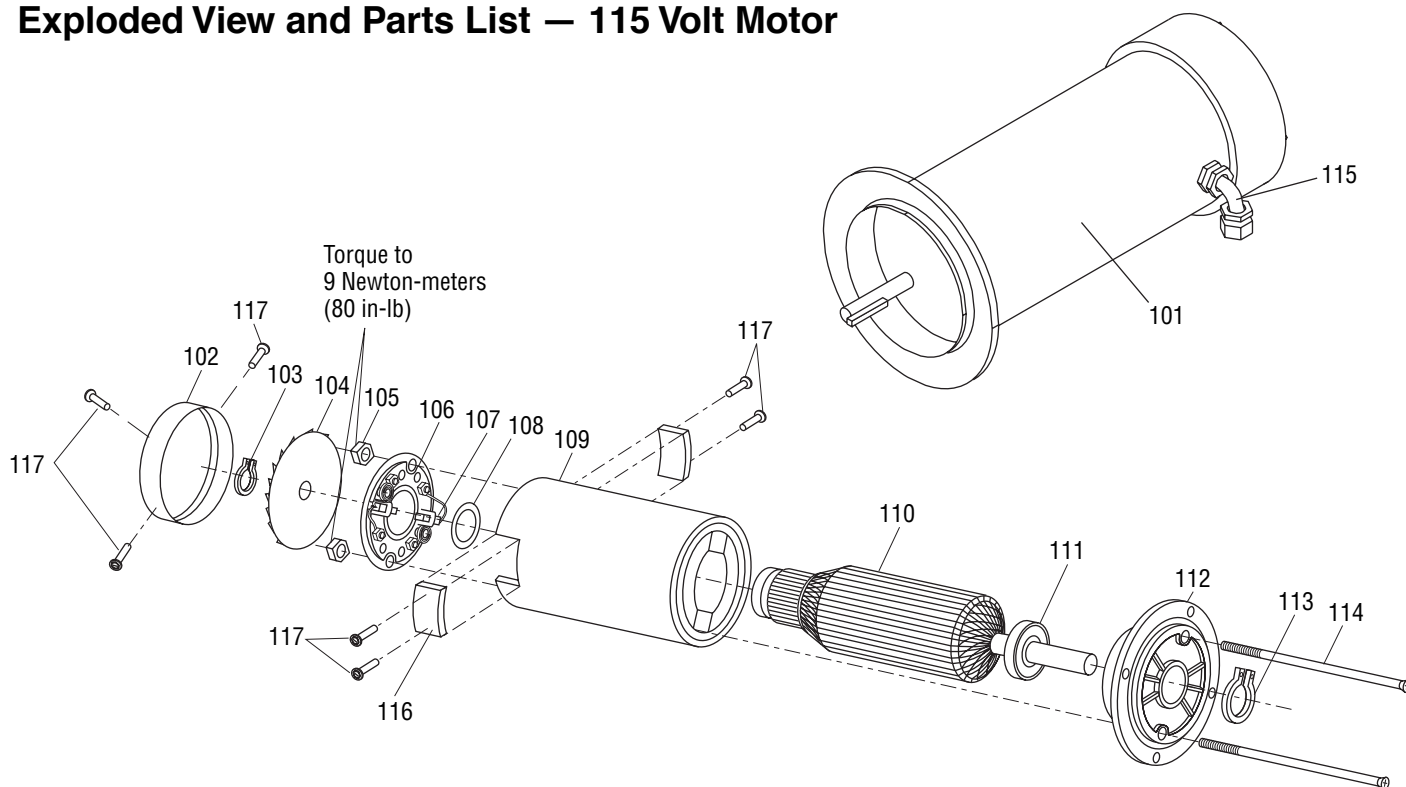
Note 2: Mount Q1 to top hole of heat sink.

Note 3: Bend leads and mount .25" off-board.

Layout Diagram — Power Generation Unit (50083570)



Exploded View and Parts List — 115 Volt Motor



Pacific Scientific

Key	Part No.	Description	Qty.
101*	91864178	Motor, 115 volt (standard) (SRF-3745-4676-2-56C)	1
102	91864712	Fan cover	1
103	90550714	Retaining ring	1
104	91864321	Fan	1
105	91864283	End bell nut	2
106	91864194	Bell, rear end	1
107	91864208	Brush	2
108	91864224	Thrust washer	1
109*	91864275	Shell and magnet assembly, 115V	1
110*	91864259	Armature, 115V	1
111	91864216	Bearing kit	2
112	91864186	Bell, front end	1
113	91864240	Retaining ring	1
114	91864267	Tie bolt, 115V	2
115	91858763	90° connector	1
116	91864305	Brush cover	2
117	91864313	Cover screw	7

**Note: Alternate motor.*

Check motor part number before ordering magnet shell or armature.

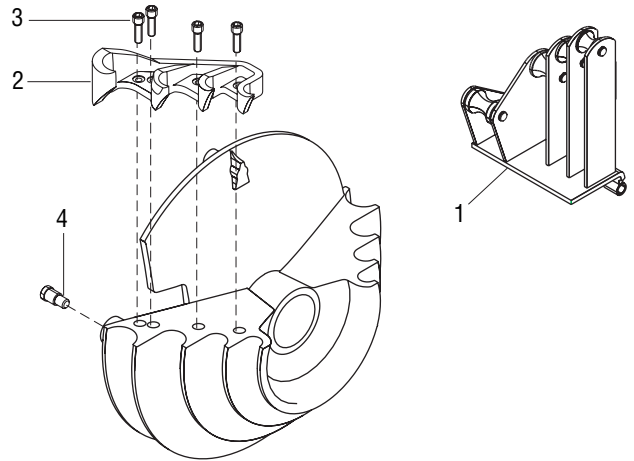
101	91869730	Motor (SRF-3648-5532-7-56C)
109	91869757	Shell and magnet assembly
110	91869749	Armature

Bending Shoes and Roller Supports

Bending Shoe and Roller Support 1/2" to 1-1/4" IMC and Rigid Conduit

Key	Part No.	Description	Qty.
1	50009362	Roller support, 1/2" to 1-1/4" IMC and Rigid	1
	50005715	Bending shoe assembly (includes items 2–4)	1
2	50005693	Hook	1
3	90510887	3/8–16 UNC x 1-1/4" Socket head cap screw	4
4	50234226	Stud, drive	3

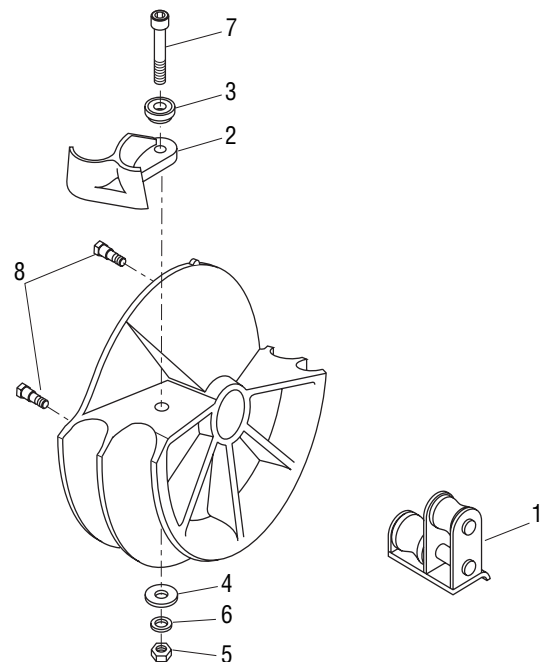
Shoe not available separately.



Bending Shoe and Roller Support 1-1/2" to 2" Rigid Conduit

Key	Part No.	Description	Qty.
1	50179845	Roller support, 1-1/2" to 2" Rigid conduit	1
	50179373	Bending shoe assembly, 1-1/2" to 2" Rigid conduit (includes items 2–8)	1
2	50179691	Pipe hook	1
3	50179748	Pivot	1
4	90526759	5/8 flat washer	1
5	90515692	5/8–11 UNC hex nut	1
6	90509056	5/8 Split lockwasher	1
7	90524268	5/8–11 UNC x 4" socket head cap screw	1
8	50234226	Stud, drive	4

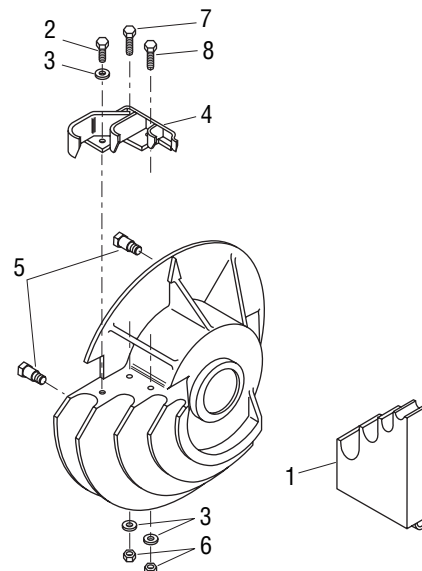
Shoe not available separately.



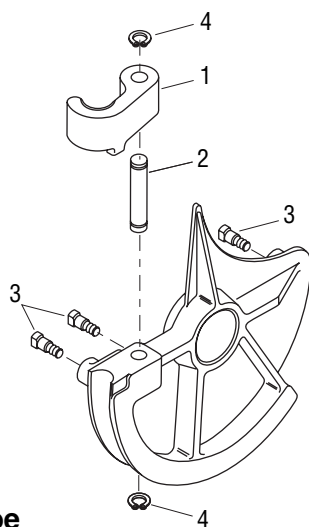
Bending Shoe and Pipe Rest 1/2" to 1-1/4" EMT Conduit

Key	Part No.	Description	Qty.
1	50179861	Pipe rest assembly for 1/2" to 1-1/4" EMT conduit	1
	50179446	Bending shoe assembly for 1/2" to 2-1/4" EMT conduit (includes items 2–8)	1
2	90505972	3/8–16 UNC x socket head cap screw	1
3	90505069	3/8 Lockwasher (split)	3
4	50245554	Pipe hook	1
5	50234226	Stud, drive	4
6	90506391	3/8–16 UNC hex nut, cad. plated	2
7	90505328	3/8–16 UNC x 1-1/4 SAE grade 5 socket head cap screw	1
8	90510887	3/8–16 UNC x 1-1/4 socket head screw	1

Shoe not available separately.

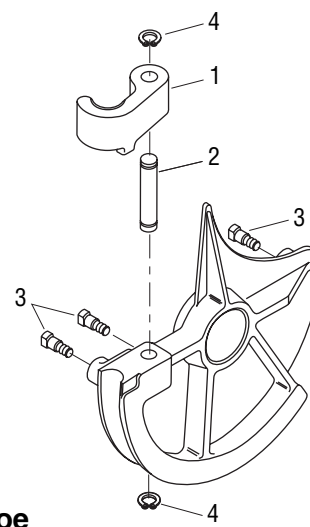


Bending Shoes and Roller Supports (cont'd)



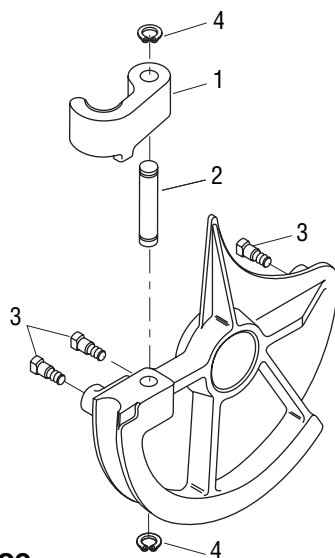
Bending Shoe
1-1/2" EMT Conduit

Key	Part No.	Description	Qty.
	50234994	Shoe unit, 1-1/2" EMT (includes items 1–4)	1
1	50188208	Hook, 1-1/2" EMT	1
2	50188410	Pin, 1-1/2" EMT hook	1
3	50234226	Stud, drive	3
4	90515293	Ring, Tru-Arc #5160-87 retaining	2



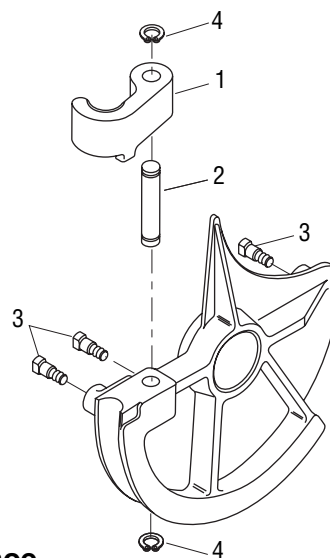
Bending Shoe
1-1/2" IMC Conduit

Key	Part No.	Description	Qty.
	50253631	Shoe unit, 1-1/2" IMC (includes items 1–4)	1
1	50188119	Hook, 1-1/2" IMC	1
2	50188372	Pin, 1-1/2" IMC	1
3	50234226	Stud, drive	3
4	90515285	Ring, Tru-Arc retaining	2



Bending Shoe
2" EMT Conduit

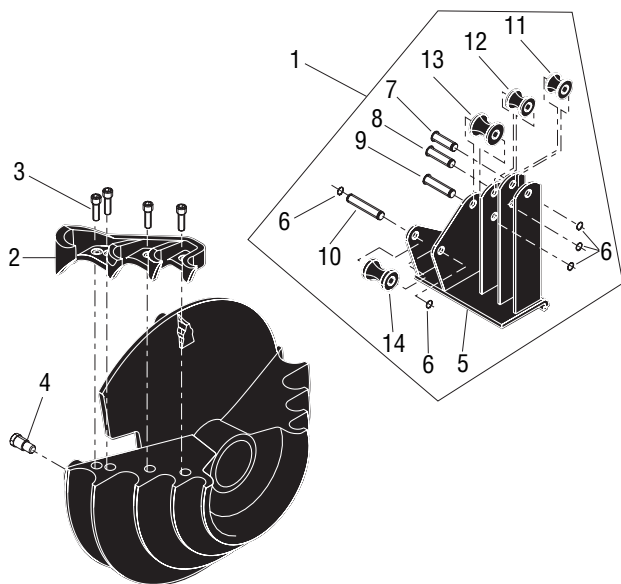
Key	Part No.	Description	Qty.
	50235052	Shoe unit, 2" EMT conduit (includes items 1–4)	1
1	50188186	Hook, 2" EMT	1
2	50188429	Pin, 2" EMT hook	1
3	50234226	Stud, drive	3
4	90515293	Ring, Tru-Arc #5160-87 retaining	2



Bending Shoe
2" IMC Conduit

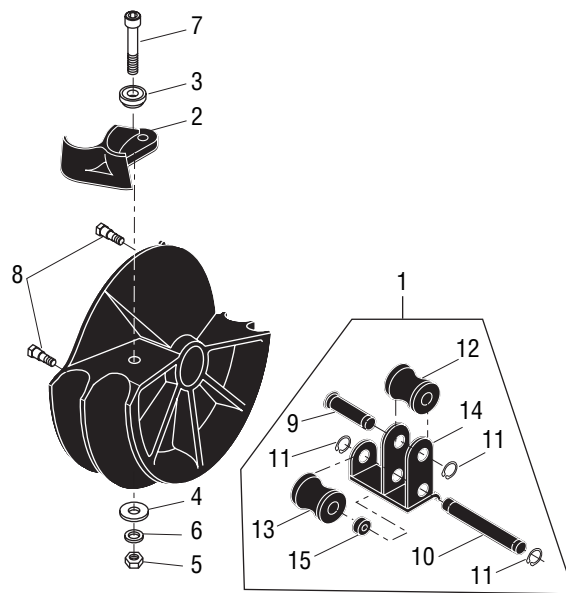
Key	Part No.	Description	Qty.
	50252682	Shoe unit, 2" IMC (includes items 1–4)	1
1	50001957	Hook, 2" IMC	1
2	50188429	Pin, 2" IMC	1
3	50234226	Stud, drive	3
4	90515293	Ring, Tru-Arc retaining	2

Bending Shoes and Roller Supports (cont'd)



1/2" to 1-1/4" 40 Mil PVC-Coated Rigid Conduit

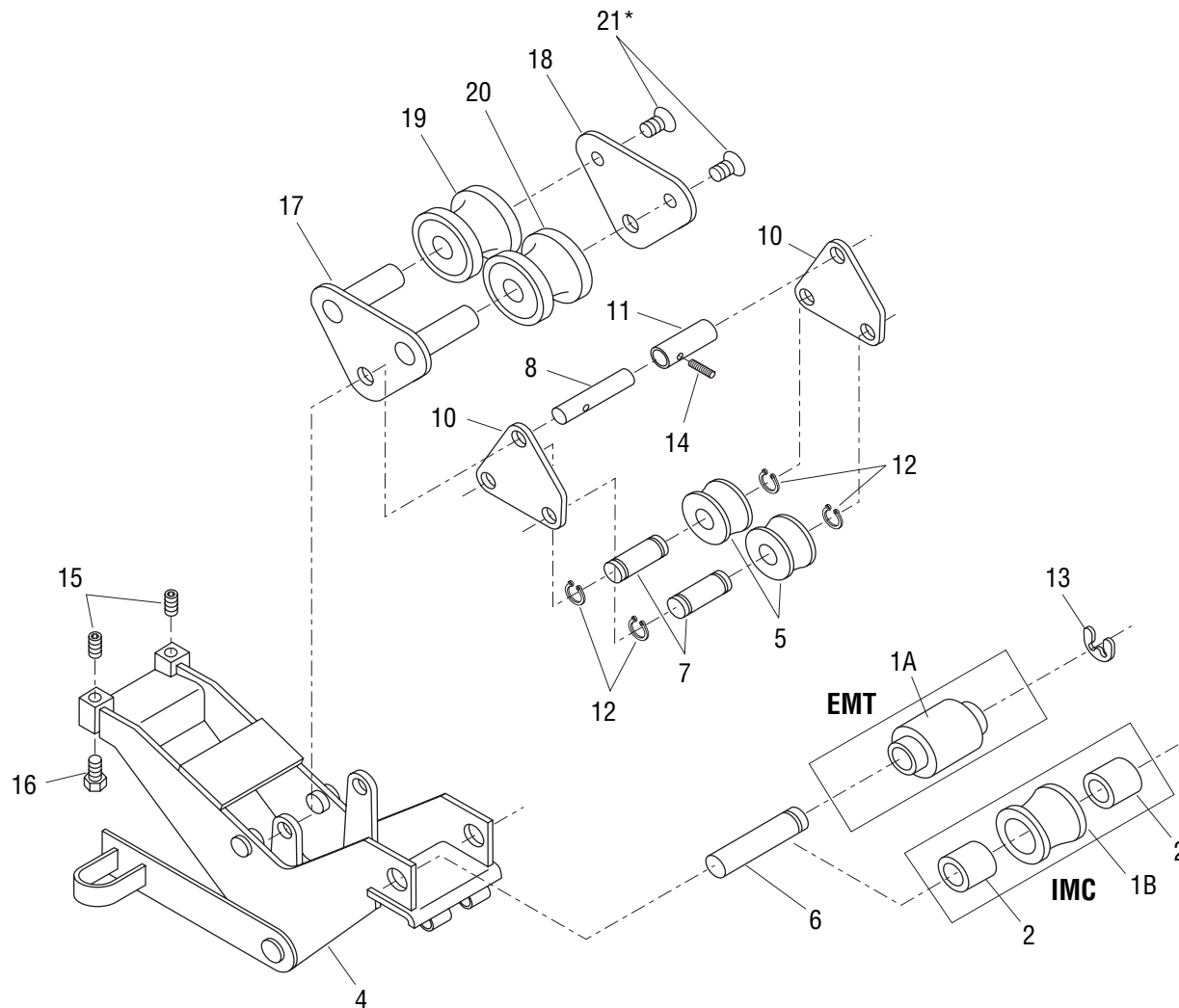
Key	Part No.	Description	Qty.
1	50009460	Roller support, 1/2" to 1-1/4" PVC-coated Rigid (includes items 5–14)	1
	50005731	Bending shoe assembly, 1/2" to 1-1/4" PVC-coated Rigid (includes items 2–4)	1
2	50005707	Hook	1
3	90510887	3/8–16 UNC x 1-1/4" Socket head cap screw	4
4	50234226	Stud, drive	3
5	50009451	Support weldment, roller	1
6	90513533	Retaining ring	5
7	50009230	1/2" Roller axle	1
8	50009249	3/4" Roller axle	1
9	50009257	1" Roller axle	1
10	50009265	1-1/4" Roller axle	1
11	50009273	1/2" Roller	1
12	50009281	3/4" Roller	1
13	50009290	1" Roller	1
14	50009303	1-1/4" Roller	1



1-1/2" to 2" 40 Mil PVC-Coated Rigid Conduit

Key	Part No.	Description	Qty.
1	50372823	Roller support, 1-1/2" to 2" PVC-coated Rigid	1
	50372815	Bending shoe assembly, 1-1/2" to 2" PVC (includes items 2–8)	1
2	50024990	Hook	1
3	50179748	Pivot	1
4	90526759	5/8" Flat washer	1
5	90515692	5/8–11 UNC hex nut	1
6	90509056	5/8" Lockwasher	1
7	90524268	5/8–11 UNC x 4" Socket head cap screw	1
8	50234226	Stud, drive	4
9	50376624	1-1/2" Shaft	1
10	50376616	2" Shaft	1
11	90515285	Retaining ring	3
12	50372840	1-1/2" Roller	1
13	50372831	2" Roller	1
14	50376640	Support weldment	1
15	50320254	Spacer	1

Bending Shoes and Roller Supports (cont'd)



*Key No. 21 must be torqued to 54 to 61 Newton-meters (40 to 45 ft-lb).

Bending Shoes and Roller Supports (cont'd)

EMT Roller Support Unit

Key	Part No.	Description	Qty.
	502 35419	Support unit, 1-1/2" and 2" EMT roller (includes all of the following)	1
1A	50279831	Roller unit, cushioned	1
4	50235397	Frame unit	1
5	50235109	Roller, 1-1/2" EMT	2
6	50235117	Pin, roller support	1
7	50239325	Pin, 1-1/2" EMT roller	2
8	50235176	Pin, roller pivot	1
10	50235249	Plate, 1-1/2" EMT pivot	2
11	50237934	Spacer	1
12	90515285	Ring, retaining	4
13	90524640	Ring, Tru-Arc #X5133-98 external series "E" retaining	1
14	90514912	Rollpin, #59, -040-187-1250	1
15	90528484	Screw, 1/2-13 UNC x 3/4 cup pt. skt. set	2
16	90505425	Screw, 1/2-13 UNC x 1 hex head cap	2
17	50349643	Support weldment, 2" roller	1
18	50349651	Plate, 2" inner roller support	1
19	50235192	Roller, 2" EMT front	1
20	50237926	Roller, 2" EMT back	1
21*	90533941	Screw, 7/16-14 UNC x 1 flat head	2

IMC Roller Support Unit

Key	Part No.	Description	Qty.
	50252739	Support unit, 1-1/2" and 2" IMC roller (includes items 1 and 2)	1
1B	50283340	Roller	1
2	50283359	Spacer	2
4	50263250	Frame unit	1
5	50252747	Roller, 1-1/2" IMC	2
6	50235117	Pin, roller support	1
7	50239325	Pin, 1-1/2" IMC roller	2
8	50235176	Pin, roller pivot	1
10	50235249	Plate, 1-1/2" IMC pivot	2
11	50237934	Spacer	1
12	90515285	Ring, retaining	4
13	90524640	Ring, Tru-Arc #X5133-98 external series "E" retaining	1
14	90514912	Rollpin, #59, -040-187-1250	1
15	90528484	Screw, 1/2-13 UNC x 3/4 cup pt. skt. set	2
16	90505425	Screw, 1/2-13 UNC x 1 hex head cap	2
17	50349643	Support weldment, 2" roller	1
18	50349651	Plate, 2" inner roller support	1
19	50252798	Roller, 2" IMC	2
21*	90533941	Screw, 7/16-14 UNC x 1 flat head	2



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