

INSTRUCTIONS AND PARTS MANUAL

HOB-O

Bug-O Systems is guided by honesty, integrity and ethics in service to our customers and in all we do.

Please record your equipment identification information below for future reference. This information can be found on your machine nameplate.

Model Number: _____

Serial Number: _____

Date of Purchase: _____

Whenever you request replacement parts or information on this equipment, always supply the information you have recorded above.

LIT-HOBO-IPM-0611



BUG-O SYSTEMS
A DIVISION OF WELD TOOLING CORPORATION



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SAFETY

PROTECT YOURSELF AND OTHERS FROM SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.



ELECTRIC SHOCK can kill.

1. The equipment is not waterproof. Using the unit in a wet environment may result in serious injury. Do not touch the equipment when wet or standing in a wet location.
2. Never open the equipment without first unplugging the power cord or serious injury may result.
3. Verify the customer-supplied power connections are made in accordance with all applicable local and national electrical safety codes. If none exist, use International Electric Code (IEC) 950.
4. Never remove or bypass the equipment power cord ground. Verify the equipment is grounded in accordance with all applicable local and national electrical safety codes. If none exist, use International Electrical Code (IEC) 950.



READ INSTRUCTIONS

Read the instruction manual before installing and using the equipment.



EQUIPMENT DAMAGE POSSIBLE.

1. Do not plug in the power cord without first verifying the equipment is OFF and the cord input voltage is the same as required by the machine or serious damage may result.
2. Do not leave the equipment unattended. Remove from the worksite and store in a safe location when not in use.



FALLING EQUIPMENT can cause serious personal injury and equipment damage.

Faulty or careless user installation is possible. As a result, never stand or walk underneath equipment.



MOVING PARTS can cause serious injury.

1. Never try to stop the pinion from moving except by removing power or by using the STOP control.
2. Do not remove any protective panels, covers or guards and operate equipment.

CAUTION

DO NOT LEAVE EQUIPMENT UNATTENDED WHEN NOT IN USE!

Remove from work site and store in a safe location.

HOB-O

INSTRUCTION AND PARTS MANUAL

TABLE OF CONTENTS

PAGE

5.....	TECHNICAL DATA
6.....	OPERATING INSTRUCTIONS
7.....	HOB-5100-F DC DRIVE UNIT
8.....	EXPLODED VIEW / HOB-O
9.....	PARTS LIST / HOB-O
10.....	EXPLODED VIEW / HOB-5100-F DC DRIVE UNIT
11.....	PARTS LIST / HOB-5100-F DC DRIVE UNIT
12.....	EXPLODED VIEW / VACUUM PUMP
13.....	PARTS LIST / VACUUM PUMP
14.....	VACUUM SUPPORT KIT
15.....	WIRING DIAGRAM / HOB-5100-F DC DRIVE UNIT
16.....	ACCESSORIES
17.....	TROUBLESHOOTING GUIDE
18.....	WARRANTY

**THIS PRODUCT IS COVERED BY ONE OR
MORE PATENTS WORLD WIDE.**

TECHNICAL DATA

HOB-O PRECISION HOLE BURNER BEVELER

Power Requirement: HOB-2204 120VAC
 HOB-2224 240VAC DC HOBO w/Blind Area Kit
 HOB-2214 42VAC

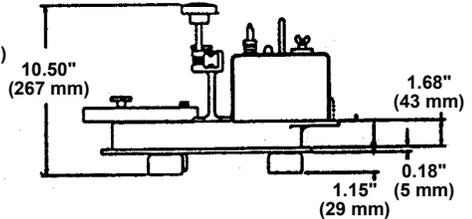
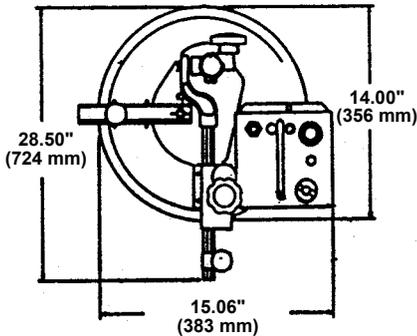
HOB-2303 120VAC
 HOB-2323 240VAC DC HOBO w/4-magnet base
 HOB-2313 42VAC

NOTE: 7.50" to 15.00" (191-381 mm) can be cut using the Blind Area Kit

Net Weight: 30 lbs. (13.6 kg)

Shipping Weight: 35 lbs. (15.9 kg)

Cutting Range: Inside: 1-8" (25-203 mm)
 Outside: 14.5-48" (368-1219 mm)



CAPACITIES AND SPEED RANGES

(HOB-5100-F 150:1 RATIO)

DIA. INCH	INCH SPEED IPM	DIA. MM	METRIC SPEED MM/MIN
1	0.4-8	25.4	10.2-200
4	1.6-32	102	40.6-813
8	3.2-64	203	81.3-1626
15	6-120	381	152-3048
20	8-160	508	203-4064
25	10-200	635	254-5080
30	12-240	762	305-6096
35	14-280	889	356-7112
40	16-320	1016	406-8128
45	18-360	1143	457-9144
48	19.2-384	1219	488-9754

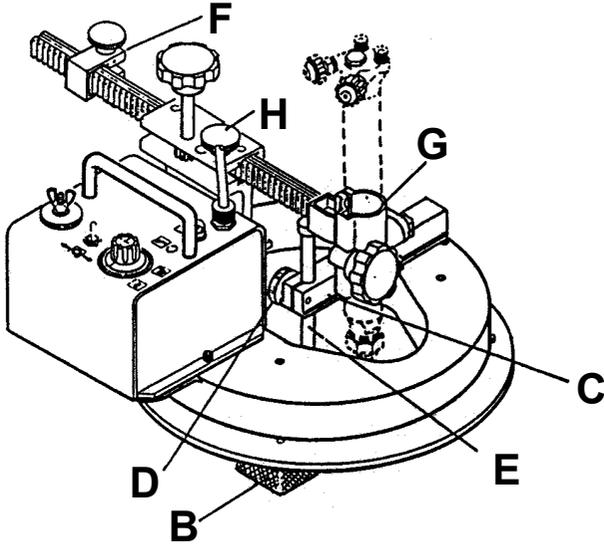
Speed range can also be found from formula:

Minimum speed per minute (0.4 x diameter).

Maximum speed per minute (8 x diameter).

Individual machines may operate at speeds lower than minimum shown in chart.

OPERATING INSTRUCTIONS



SET-UP AND CUTTING

NOTE: Heat protection tape is wrapped around magnets (B).

1. Push centering Assembly Slide (C) into center of machine and lock.
2. Loosen Pin Lock (D) to release Center Pin (E).
3. Allow Center Pin (E) to project beneath base of machine and place in center-punch mark. "Ride" machine down to the work on the center pin and be sure it seats firmly on the magnets. The entire machine is now centered. Do not hammer or you will knock out the alignment.

NOTE: Similar procedure locates the HOB-O when vacuum cups or Blind Area Kit are used.

4. Snug up rack action with Knob (H), so that rack is held firmly but can still move smoothly in rackholder.
5. When the centering assembly and the torch are fully retracted, the torch is on center. Thus, a small drilled hole can be used to locate center and as a starting hole for fast accurate cutting of small holes.
6. Set Rack Stop (F) to desired radius (minus kerf width) and Torchholder Assembly (G) to desired angle. (Minus kerf width for holes; plus kerf width for discs or pancakes).
7. Ignite torch (with Shoot-a-lite provided) and pierce hole or start in drilled starting hole - **(IN THE MATERIAL WHICH WILL BE SCRAP)**.
8. As soon as the cut is started, switch on travel motor, then rack slowly until the Rack Stop (F) stops against the back of the rackholder. This movement will feather the cut into the desired radius without notching.

HOB-5100-F DC DRIVE UNIT

DRIVE UNIT OPERATION:

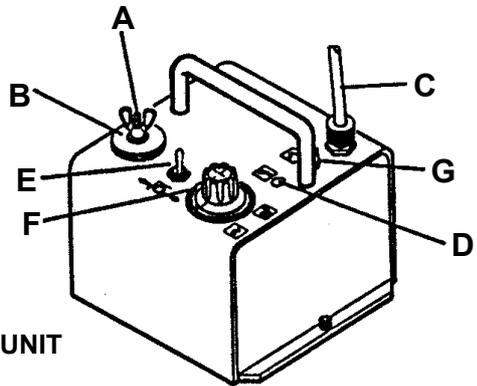
Rotating Cam Knob (B) will move drive pinion in and out of engagement with the ring gear.

To disengage the drive pinion from the ring gear, loosen the 1/4-28 Wing Nut (A) and turn Knob (B) counter clockwise. Turn Knob (B) clockwise to engage the drive pinion with the ring gear, re-tighten the 1/4-28 Wing Nut (A) to lock in position.

When Power Cord (C) is plugged into the appropriate power source, Pilot Light (D) will glow. Switch (E) controls direction of travel, with the center position as "OFF", Knob (F) controls speed. Circuit Breaker (G) protects the unit against overload or electrical faults.

CAUTION: If the Circuit Breaker (G) opens, **FIND and CORRECT CAUSE OF FAILURE BEFORE RESETTNG.**

NOTE: For DC Drive Unit details, see page 10 and 11.



TECHNICAL DATA:

HOB-O DRIVE UNIT

Power Requirement:	HOB-5100-F	120/150-60/1
	HOB-5102-F	240/50-60/1
	HOB-5104-F	42/50-60/1

Dimensions: 7.12"L x 6.63"W x 6.75"H
(181 x 168 x 172 mm)

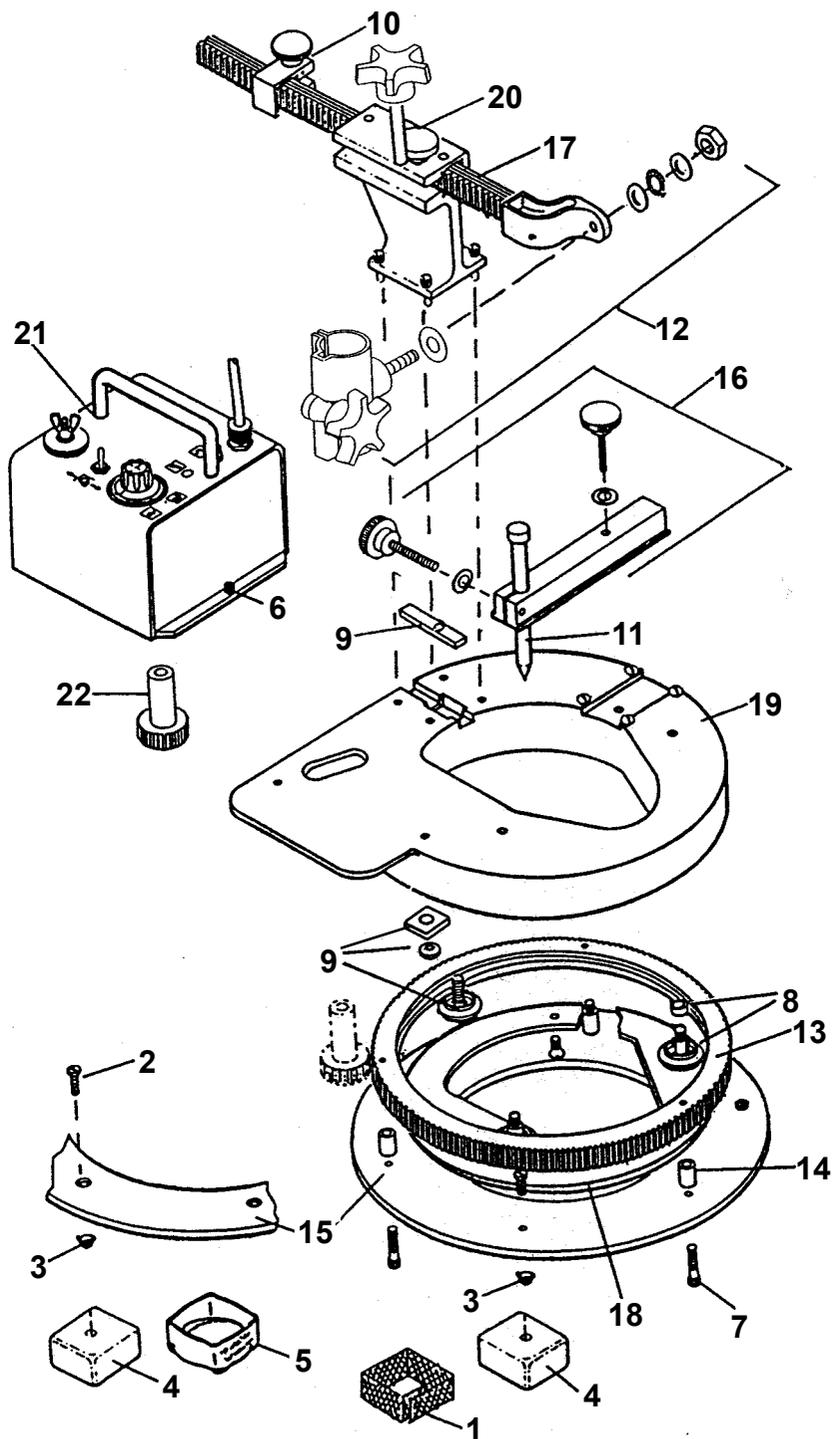
Net Weight: 10 lbs. (4.5 kg)

Speed: *5-100 ipm (127-2540 mm/min)
(Measured at Drive Pinion)

Load Capacity: *10 lbs. (4.5 kg) Vertical
(Measured at Drive Pinion)

*NOTE: Speed and load ratings apply at radius of ring gear. Speed is proportional to radius at any other point, and load rating is inversely proportional to radius.

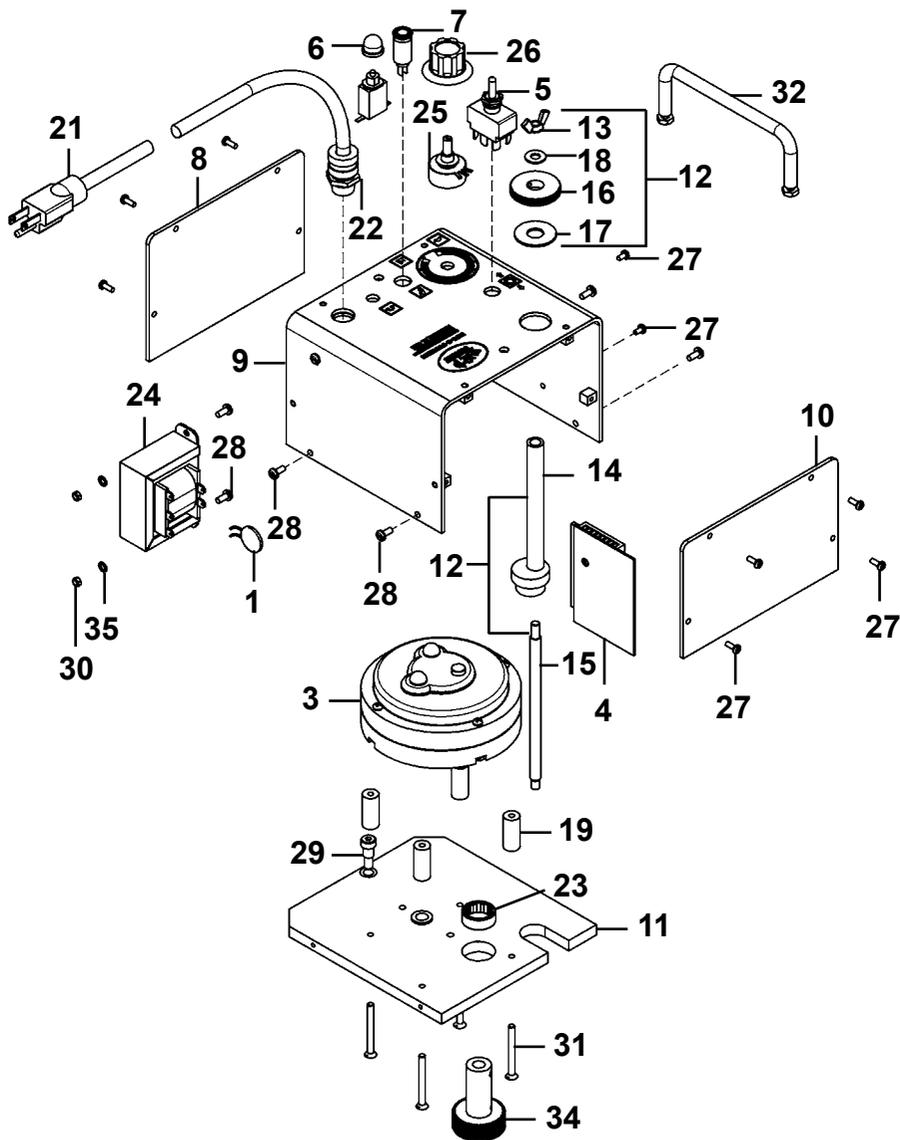
EXPLODED VIEW / HOB-O



PARTS LIST / HOB-O

<u>ITEM</u>	<u>PART NO.</u>	<u>QTY</u>	<u>DESCRIPTION</u>
1	ARM-2218	4	Heat Protection Tape
2	ARM-2242	4	Swivel Screw
3	ARM-2243	4	Swivel Spring
4	ARM-2244	4	Swivel Magnet
5	ARM-2235	4	Magnet Cover
6	FAS-0654	1	Soc Hd Shldr Screw 5/16 x 3/8
7	FAS-2551	3	Soc Hd Cap Screw 1/4-20 x 1-1/4
8	HOB-1002	2	Stationary Wheel Assembly
9	HOB-1004	1	Adjustable Wheel Assembly
10	HOB-1025	1	Rack Stop
11	HOB-1029	1	Center Pin
12	HOB-1035	1	Torchholder Assembly
13	HOB-1041	1	Ring Gear
14	HOB-1042	3	Ring Spacer
15	HOS-1044	1	Magnet Ring
16	HOB-1064	1	Centering Assembly (Must be installed at factory) (Includes Item 11)
17	HOB-1066	1	Torch Support
18	HOB-1096	1	Spatter Guard
19	HOB-2001	1	Base Casting
20	HOB-2255	1	Rackholder Assembly
21	HOB-5100-F	1	DC Drive Unit Assembly (Includes Items 6 & 22) 240 VAC: HOB-5102-F (Includes Items 6 & 22) 42 VAC: HOB-5104-F (Includes Items 6 & 22)
22	HOB-5105	1	Drive Gear Assembly

EXPLODED VIEW / HOB-5100-F DC DRIVE UNIT

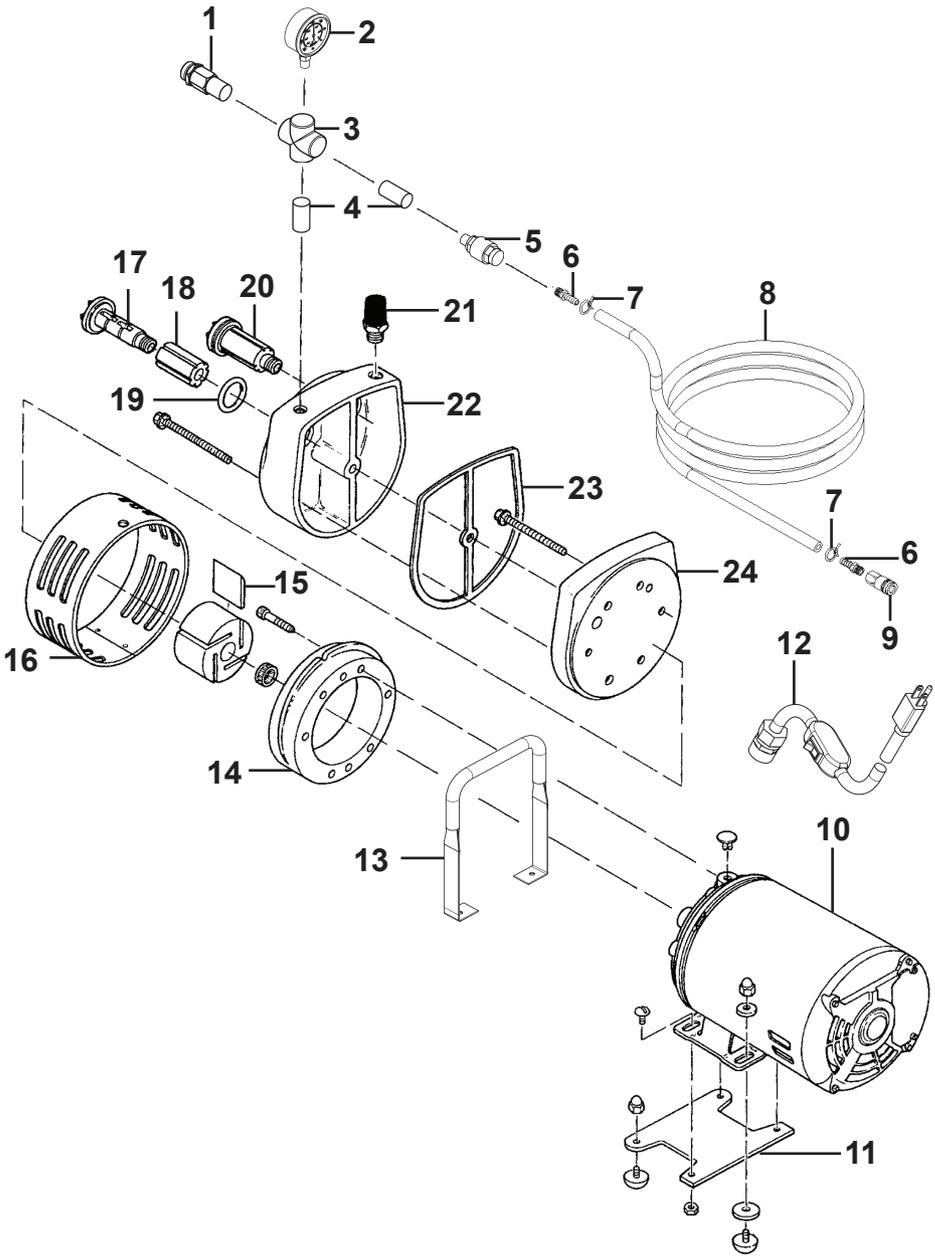


PARTS LIST / HOB-5100-F DC DRIVE UNIT

<u>ITEM</u>	<u>PART NO.</u>	<u>QTY</u>	<u>DESCRIPTION</u>
*1	BUG-1393	1	Volt Trap 120 VAC
*2	BUG-1415	1	Pilot Light 120 VAC
3	BUG-1550	1	Gear Motor
4	BUG-1725	1	Precision Speed Control
5	BUG-2255	1	Toggle Switch
*6	BUG-2923	1	Circuit Breaker .7A
7	BUG-2924	1	Reset Button Seal
8	BUG-2988	1	End Plate
9	BUG-5111	1	Cover
10	BUG-5112	1	End Plate
11	BUG-5114	1	Swivel Plate
12	BUG-5120	1	Cam Clutch Assembly (Includes items 13 thru 18)
13	BUG-2767W	1	Wing Nut 1/4-28
14	BUG-5113	1	Tube & Cam Assembly
15	BUG-5116	1	Stud
16	BUG-5119	1	Knob (Includes Set Screw)
17	BUG-5122	1	Delrin Washer
18	WAS-0240	1	1/4 Washer
19	BUG-5121	4	Standoff
20	BUG-9444	1	Tool Kit
*21	BUG-9445	1	Power Cord
22	BUG-9446	1	Cord Grip
23	BUG-9614	1	Needle Bearing
*24	BUG-9675	1	Transformer 120 VAC
25	BUG-9677	1	Potentiometer
26	BUG-9687	1	Knob
27	FAS-0114	8	Pan Hd Screw 6-32 x 3/8
28	FAS-0124	7	Pan Hd Screw 8-32 x 3/8
29	FAS-0654	1	Soc Hd Shldr Screw 5/16 x 3/8
30	FAS-1320	3	Hex Nut 8-32
31	FAS-2824	4	Flt Hd Screw 8-32 x 1-3/4
32	GOF-3019	1	Handle (Includes Hex Nuts)
33	HOB-5105	1	Drive Gear Assembly
34	HOB-5105	1	Drive Geary Assembly
35	WAS-0221	1	#8 Internal Star Lock Washer

* See Electrical Component Chart For HOB-5102-F (240 VAC) and HOB-5104-F (42 VAC) Parts Numbers.

EXPLODED VIEW / VACUUM PUMP



PARTS LIST / VACUUM PUMP

<u>ITEM</u>	<u>QUANTITY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	ARV-2017	1/4" Brass Vacuum Relief Valve
2	1	ARV-2014	Vacuum Gage
3	1	ARV-2018	1/4" NPT Union Cross, Female
4	2	ARV-2012	1/4" NPT Nipple
5	1	ARV-2016	1/4" NPT Brass Check Valve, F
6	2	ARV-1107	3/8" Hose Barb x 1/4" NPT-M
7	2	ARV-1005	Hose Clamp
8	1	ARV-1004-P	Hose 3/8" ID x 11/16" OD
9	1	ARV-1012	Female Quick Connector
10	1	ARV-2025	Motor
11	1	ARV-1999	Foot Support (Includes Fasteners)
12	1	ARV-2021	120 VAC Power Cord w/Switch
13	1	ARV-2013	Handle
14	1	ARV-2011	Body
15	4	ARV-2010	Vane
16	1	ARV-2009	Shroud
17	2	ARV-2003	End Cap
18	2	ARV-2004	Felt
19	2	ARV-2005	O-ring
20	2	ARV-2002	End Cap Assembly (Includes 17, 18, & 19)
21	1	ARV-2001	Filter / Muffler
22	1	ARV-2006	Muffler Box
23	1	ARV-2007	Gasket
24	1	ARV-2008	End Plate

*Not Shown: BUG-9593 and BUG-9594

VACUUM SUPPORT KIT

HOB-VACUUM BASES can be mounted on any HOB-O.

Four Cup Vacuum Bases HOB-1140 adjust to curved surfaces.

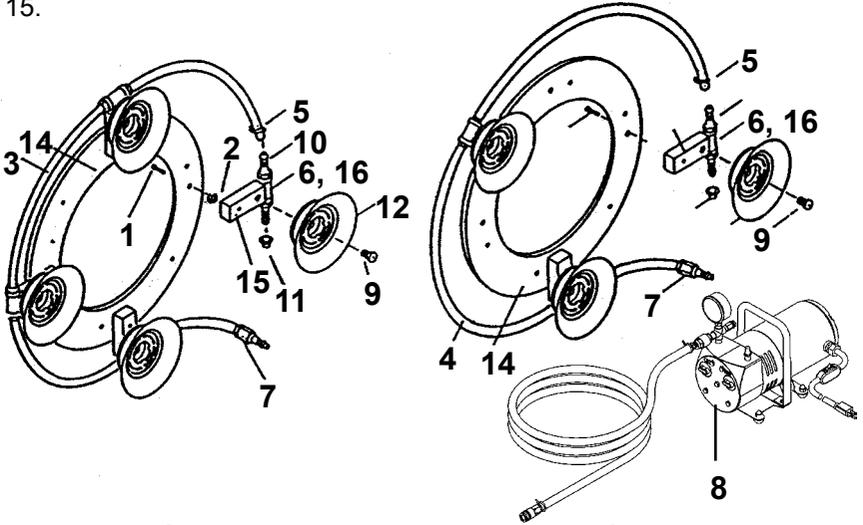
Three Cup Vacuum Bases HOB-1146 are designed for use on flat surfaces.

Each Vacuum Cup holds 12" (305 mm) of mercury vacuum. (Dirt and scale block vacuum lines; blow-out when clogged).

Keep flame 4" (101 mm) away from cups when burning or welding. Silicone Vacuum Cups will withstand a temperature of 600° F (318° C).

HOB-1149 Vacuum Support Bar (Fixed) Includes items 6, 9,10,12,13, and 15.

HOB-1151 Vacuum Support Bar with Swivel Includes items 1, 2, 6, 9,10,12, and 15.



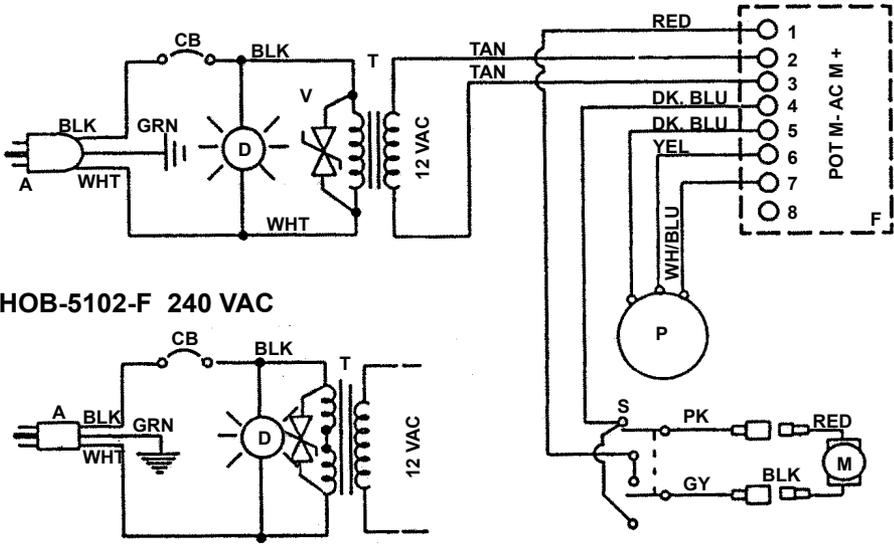
HOB-1140

HOB-1146

ITEM	PART NO.	HOB-1140 HOB-1146		DESCRIPTION
		QTY	QTY	
1	ARM-2242	4		Swivel Screw
2	ARM-2243	4		Swivel Spring
3	ARV-1004-14	4		Hose-14" (355 mm)
4	ARV-1004-18		3	Hose-18" (457 mm)
5	ARV-1005	8	6	Hose Clamp
6	ARV-1021	4	3	1/4 NPT "T"
7	ARV-1018	1	1	QC MALE w/Barb
8	ARV-2020			Vac. Pump Kit 120/50-60/1
	ARV-2030			Vac. Pump Kit 240/50-60/1
9	ARV-1034	4	3	Choke Nipple
10	ARV-1107	8	6	3/8" Hose Barb 1/4 NPT
11	ARV-1109	1	1	Protective Cap
12	ARV-1116	4	3	Vac. Cup (Silicone) 50lb (22.7kg)
13	FAS-0357		3	Hex Hd Cap Scr 1/4-20 x 3/4
14	HOB-1044	1	1	Magnet Ring
15	HOB-1152	4	3	Bar
16	ARQ-1125	4	3	1/4 NPT Close Nipple Brass

WIRING DIAGRAM / HOB-5100-F DC DRIVE UNIT

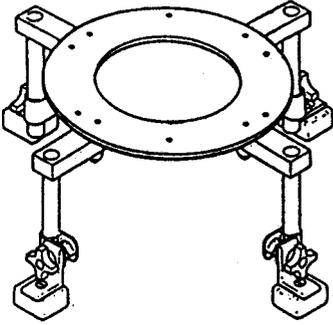
HOB-5100-F 120 VAC
 HOB-5102-F 240 VAC
 HOB-5104-F 42 VAC



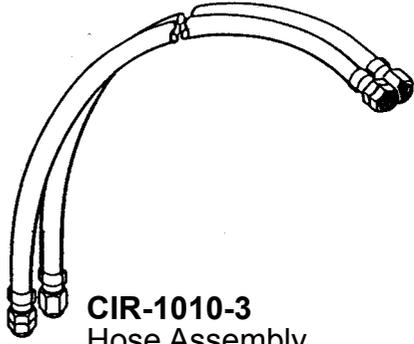
ELECTRICAL COMPONENT CHART

ITEM	DESCRIPTION	PART NUMBER		
		HOB-5100-F 120 VAC	HOB-5102-F 240 VAC	HOB-5104-F 42 VAC
A	Power Cord	BUG-9445	GOF-3115	BUG-9442
CB	Circuit Breaker	BUG-2923	BUG-2952	BUG-2933
D	Pilot Light	BUG-1415	BUG-1428	BUG-1427
V	Volt Trap	BUG-1393	BUG-1563	BUG-1393
T	Transformer	BUG-9675	GOF-3112	BUG-1466
M	Gear Motor	BUG-1550 (150:1)		
F	Precision Speed Control	BUG-1725		
S	Toggle Switch	BUG-2255		
P	Potentiometer Control	BUG-9686		

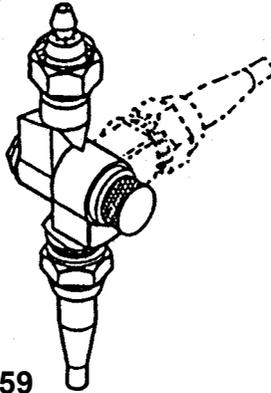
ACCESSORIES



HOB-2080
Blind Area Kit



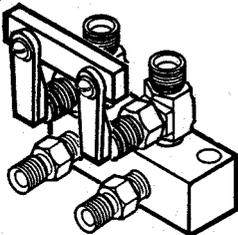
CIR-1010-3
Hose Assembly
32" (812 mm)



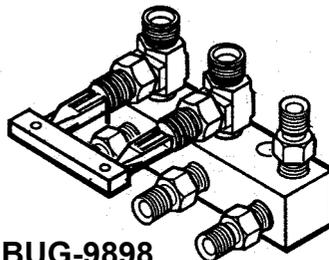
BUG-1259
Adjustable tip adapter
Required w/Blind Area Kit

Quick-Acting Manifolds

Eliminate resetting pre-heat valves each time torch is lighted.



GOF-3025
2-Hose



BUG-9898
3-Hose

TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	REMEDY
Does not run, indicator light off.	No power to machine.	Check power line supply voltage. Plug in line cord firmly.
Does not run, indicator light off. Circuit breaker tripped.	Wiring shorts.	Disconnect machine and examine internally; rewire at fault. If none found, throw direction switch to 'OFF', reset breaker and plug in.
	Shorted motor.	If breaker does not trip, replace drive unit.
	Faulty speed control board. Burned out transformer.	If breaker trips again, replace control board. (OR) Replace transformer.
Does not run, indicator light on.	Bad connection.	Check wiring connections, 12 VAC should appear across secondary of transformer. Tighten terminal screws on speed control board.
	Faulty speed control board.	If DC Volts = 0 across leads to motor; replace control board.
Unit runs, but no control over speed.	Faulty speed control board.	Replace control board. (Check connection first).

NOTE: Make sure unit is plugged into correct voltage, (120VAC, 240VAC, 42VAC) corresponding to Model No. rating.

WARRANTY

LIMITED 3-YEAR WARRANTY

MODEL _____
SERIAL NO. _____
DATE PURCHASED: _____
WHERE PURCHASED: _____

For a period ending one (1) year from the date of invoice, Manufacturer warrants that any new machine or part is free from defects in materials and workmanship and Manufacturer agrees to repair or replace at its option, any defective part or machine. HOWEVER, if the invoiced customer registers the Product Warranty by returning the Warranty Registration Card supplied with the product within 90 days of the invoice date, or by registering on-line at www.bugo.com, Manufacturer will extend the warranty period an additional two (2) years which will provide three (3) total years from the date of original invoice to customer. This warranty does not apply to machines which, after Manufacture's inspection are determined by Manufacturer to have been damaged due to neglect, abuse, overloading, accident or improper usage. All shipping and handling charges will be paid by the customer.

The foregoing express warranty is exclusive and Manufacturer makes no representation or warranty (either express or implied) other than as set forth expressly in the preceding sentence. Specifically, Manufacturer makes no express or implied warranty of merchantability or fitness for any particular purpose with respect to any goods. Manufacturer shall not be subject to any other obligations or liabilities whatsoever with respect to machines or parts furnished by Manufacturer.

Manufacturer shall not in any event be liable to Distributor or any customer for any loss of profits, incidental or consequential damages or special damages of any kind. Distributor's or customer's sole and exclusive remedy against Manufacturer for any breach of warranty, negligence, strict liability or any other claim relating to goods delivered pursuant hereto shall be for repair or replacement (at Manufacturer's option) of the machines or parts affected by such breach.

Distributor's Warranty:

In no event shall Manufacturer be liable to Distributor or to any customer thereof for any warranties, representations or promises, express or implied, extended by Distributor without the advance written consent of Manufacturer, including but not limited to any and all warranties of merchantability or fitness for a particular purpose and all warranties, representations or promises which exceed or are different from the express limited warranty set forth above. Distributor agrees to indemnify and hold Manufacturer harmless from any claim by a customer based upon any express or implied warranty by Distributor which exceeds or differs from Manufacturer's express limited warranty set forth above.

HOW TO OBTAIN SERVICE:

IF YOU THINK THIS MACHINE IS NOT OPERATING PROPERLY, RE-READ THE INSTRUCTION MANUAL CAREFULLY, THEN CALL YOUR AUTHORIZED BUG-O DEALER/DISTRIBUTOR. IF THEY CANNOT GIVE YOU THE NECESSARY SERVICE, WRITE OR PHONE US TO TELL US EXACTLY WHAT DIFFICULTY YOU HAVE EXPERIENCED. BE SURE TO MENTION THE MODEL AND SERIAL NUMBERS.