

INSTRUCTIONS and PARTS MANUAL

BUG - O - VERLAY II [®]

The Complete System of Light-weight Drives, Carriages, Rails, and Accessories Designed to Mechanize Welding and Cutting Applications



WELD TOOLING CORPORATION

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TELEX 896-414 CABLE BUG-O P04

BUG-O-VERLAY II

Instructions and Parts Manual

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THIS PRODUCT IS COVERED BY ONE OR MORE OF THE FOLLOWING PATENTS:
USA 4,570,542; 3,226,027; 3,417,979; 3,535,490; 3,646,312; 3,656,364; 3,713,637;
4,456,228; 255,903; 4,241,664 - ARGENTINA 190,363 - AUSTRALIA 442,123;
457,342 - BELGIUM 777,391 - CANADA 934,657 - FRANCE 1,570,122; 7,200,141 -
ITALY 836,530; 945,649 - JAPAN 629,927; 925,019; 72,577 - LUXEMBOURG 64,522 -
MEXICO 127,417 - NETHERLANDS 141,111 - SPAIN 398,404 - SWITZERLAND 486,950 -
SWEDEN 369,049 - UNITED KINGDOM 1,372,738; 1,194,635 - WEST GERMANY
2,163,747; 1,803,291 OTHER PATENTS PENDING WORLD WIDE.

786-IPM-BUGVL

INTRODUCTION

The new BUG-O-VERLAY II is a versatile machine designed to cover a wide range of overlaying applications. It produces a scanning pattern to carry a welding gun or other process tool over the area to be covered.

The machine incorporates both a standard overlay mode, with transverse oscillation, and the reverse function mode, with back and forth motion and transverse step-over between passes. The step-over direction can also be selected.

TECHNICAL DATA

Specifications

Power Requirement - 60 Watts at rated voltage:

BUG-5350	120/50-60/1
BUG-5352	240/50-60/1
BUG-5354	42/50-60/1

Speeds: One speed setting for both tractor and cross-travel

Speed Range: 2.5 - 50 ipm
(60-1250 mm/min)

Cross-Travel: Stroke 1" to 18" maximum
(Stroke 25mm to 460mm maximum)

Dwell: 0-3 Seconds

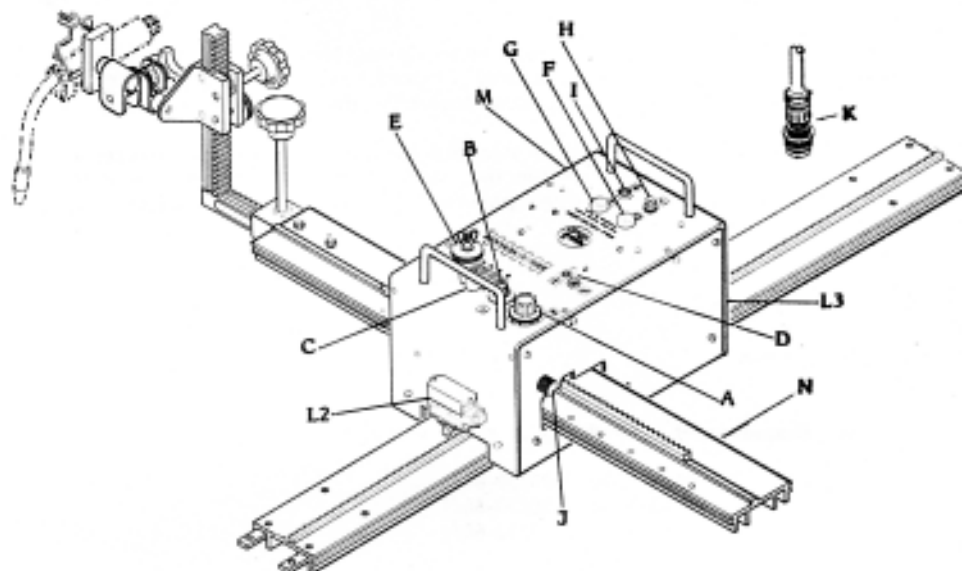
Steps: 0-2.5" (37mm)
Depending on speed and dwell

Cube: Excluding Cable Anchor and Cross Rail:
16.5"L x 10"H x 9"W
(420mm x 250mm x 240mm)

Net Weight: 37 lbs. (17 kg)

Base Rail: ARR-1080 supplied with machine

FUNCTIONS AND CONTROLS:



- A: Speed Control Knob - sets both the tractor drive speed and the crossrail traverse speed.
- B: Dwell Control Knob - sets time interval of step at each end of stroke.
- C: Selector Switch - selects desired overlay patterns: standard or reverse function (transverse or longitudinal oscillation), and direction of step-over.
- D: Weld Contact Switch - turns weld contactor on and off.
- E: Clutch Knob - engages and disengages crossrail drive.
- F: Stop Button (RED) - shuts off power to machine and also weld contactor.
- G: Start Button (BLACK) - turns machine on when pushed.
- H: Circuit Breaker - protects against electrical overload.
- I: Power Indicator Light.
- J: Stroke Adjustment Knob - for fine adjustment of stroke between stops on rail.
- K: "Amphenol" Connector - internally tied to weld contactor, for connection to wire feeder trigger control circuit.
- L2,3: Limit Switches - longitudinal.
- M: Clutch Knob - engages and disengages tractor drive on main rail.
- N: Crossrail.

SET UP AND OPERATION

1. Position longitudinal rail (ARR-1080) parallel to the workpiece, and bolt to fixture, or attach with magnet bars (not supplied with machine - order separately).
2. Align sleeve on clutch rod behind Knob **(M)** with hole in side panel and pull knob "OUT". This will disengage the drive pinion, permitting installation of BUG-O-VERLAY II on the rail. When in position on rail, push "IN" until sleeve snaps behind side panel, to engage drive.

To establish welding length, use the masonite strips and double-sided tape that have been provided. Place a masonite strip at the beginning and end of weld area.

4. When Selector Switch **(C)** is set to transverse oscillation, Outboard Limit Switches **(L2, L3)** stop the welding sequence when activated by a masonite strip.

In reverse function mode, Outboard Limit Switches **(L2, L3)** reverse direction of travel when activated by a masonite strip.

5. To install Crossrail **(N)** turn Clutch Knob **(E)** clockwise. Align cross rail with wheels and insert cross rail. Rotate Clutch Knob **(E)** counterclockwise to engage pinion.
6. The Crossrail **(N)** has tapped holes every 2" (51mm) along its length. Select two holes for the two truss head screws supplied, which act as switch actuators, to set the stroke of the cross travel in 2" (51mm) increments, and the position of the stroke.

The Knob **(J)** provides a continuous fine adjustment of up to 2" (51mm) between the step increments set by the actuators.

7. When Selector Switch **(C)** is set to transverse oscillation, the crossrail will continue to oscillate until the welding sequence is halted.

When Selector Switch **(C)** is set to reverse function mode, switch actuators on crossrail will stop the welding process when they contact a crossrail limit switch.

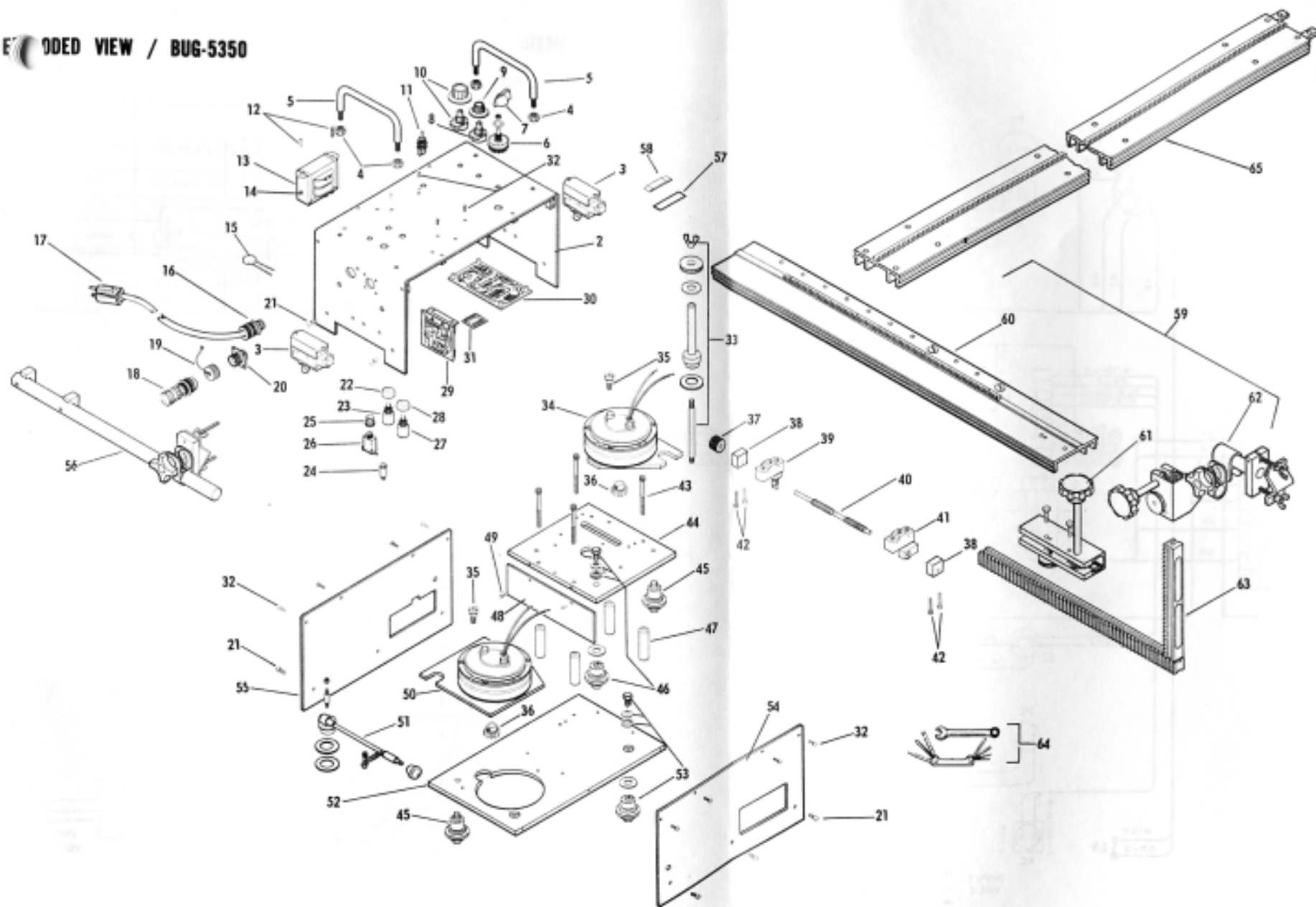
8. Connect wire feeder contactor leads to BUG-O-VERLAY II with the "Amphenol" Connector **(K)** provided.

6 PARTS LIST / BUG-5350

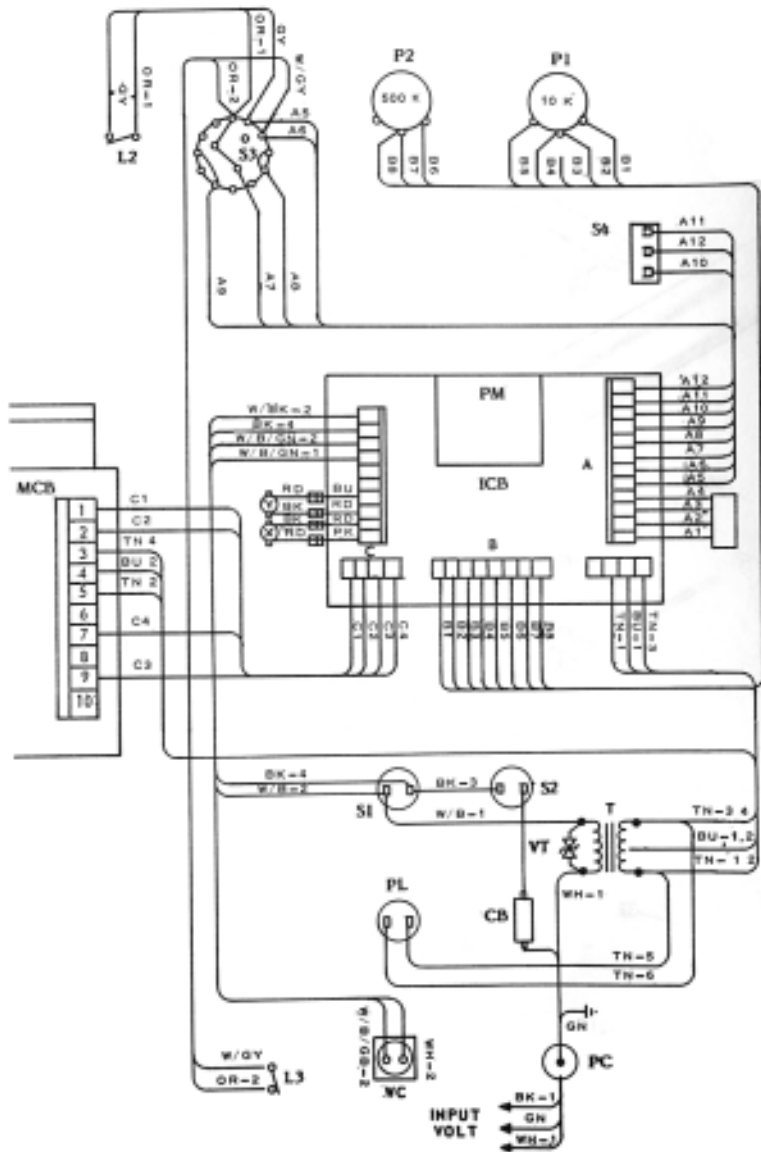
ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	BUG-5360	Cover Assy. (Incl.#2 thru #32)	*26	BUG-2923	Circuit Breaker	48	BUG-1517	Baffle
2	BUG-5361	Limit Switch	27	BUG-1536	Pushbutton Switch	49	FAS-1412	S.T.Pan Hd.Screw#2 6x1/4
3	BUG-1417	Limit Switch	28	BUG-1537	Cap - BLACK	50	BUG-5356	Carriage Drive Assy. (Includes #35 & #36)
4	FAS-1360	Hex Nut 1/4-28	29	BUG-1770	Motor Control Board	51	BUG-5357	Clutch Assy.
5	GOF-3019	Handle	30	BUG-5365	Interface Board	52	BUG-1502	Base Plate
6	BUG-5363	Selector Switch	31	BUG-5370	Program Module	53	BUG-1983	Ext.Adj.Leg & Wheel Assy.
7	BUG-9694	Knob	32	FAS-0114	Pan Hd. Screw 6-32x3/8	54	BUG-1504	Right Side Panel
8	BUG-5054	Potentiometer	33	BUG-5359	Clutch Assy.-Cross-	55	BUG-5371	Left Side Panel
9	BUG-9621	Knob	34	BUG-5358	Cross Drive Assy. (Includes #35 & #36)	56	BUG-1540	Cable Anchor Assy.
10	BUG-9686	Potentiometer & Knob	35	FAS-0654	Soc. Hd. Shldr. Screw 5/16x3/8x1/4-20	57	BUG-1419	Double-Sided Tape
11	BUG-5323	Toggle Switch	36	GOF-3014	Pinion	58	BUG-9819	Masonite Strips
12	FAS-0224	Rnd. Hd. Screw 8-32x3/8	37	BUG-9626	Knob	59	ARR-1160	Crossrail Assy. (Incl.#60 thru #63)
*13	BUG-5001	Transformer 120 VAC	38	BUG-9603	Pillow Block	60	ARR-1155	Rail Assy.
*14	FAS-1320	Hex Nut 8-32	39	BUG-9576	Limit Switch (R.H.)	61	BUG-2903	Rackholder
*15	BUG-1393	Volt Trap 120 VAC	40	BUG-1515	Screw	62	BUG-2669	All-Position Clamp
16	BUG-9446	Cord Grip	41	BUG-9577	Limit Switch (L.H.)	63	BUG-9198	Right Angle Rack
*17	BUG-9445	Power Cord	42	FAS-0527	Soc. Hd. Cap Screw 8-32x3/4	64	BUG-9444	Tool Kit
18	BUG-9487	Plug "Amphenol"	43	FAS-2557	Soc. Hd. Cap Screw 1/4-20x2-3/4	65	ARR-1080	H.D.Rigid Rail 93-1/2" (2.37m)
19	BUG-9628	Cap & Chain Assy.	44	BUG-1516	Motor Mount			
20	BUG-9486	Socket "Amphenol"	45	BUG-2956	Fixed Leg & Wheel Assy.			
21	FAS-0724	Fl. Hd. Screw 8-32x3/8	46	BUG-1982	Ext.Adj.Leg & Wheel Assy.			
22	BUG-9802	Cap - RED	47	BUG-1522	Stand-Off			
23	BUG-9801	Pushbutton Switch						
24	BUG-1427	Pilot Light						
25	BUG-2924	Reset Seal						

* See Electrical Component Chart for 240 VAC and 42 VAC Part Numbers.

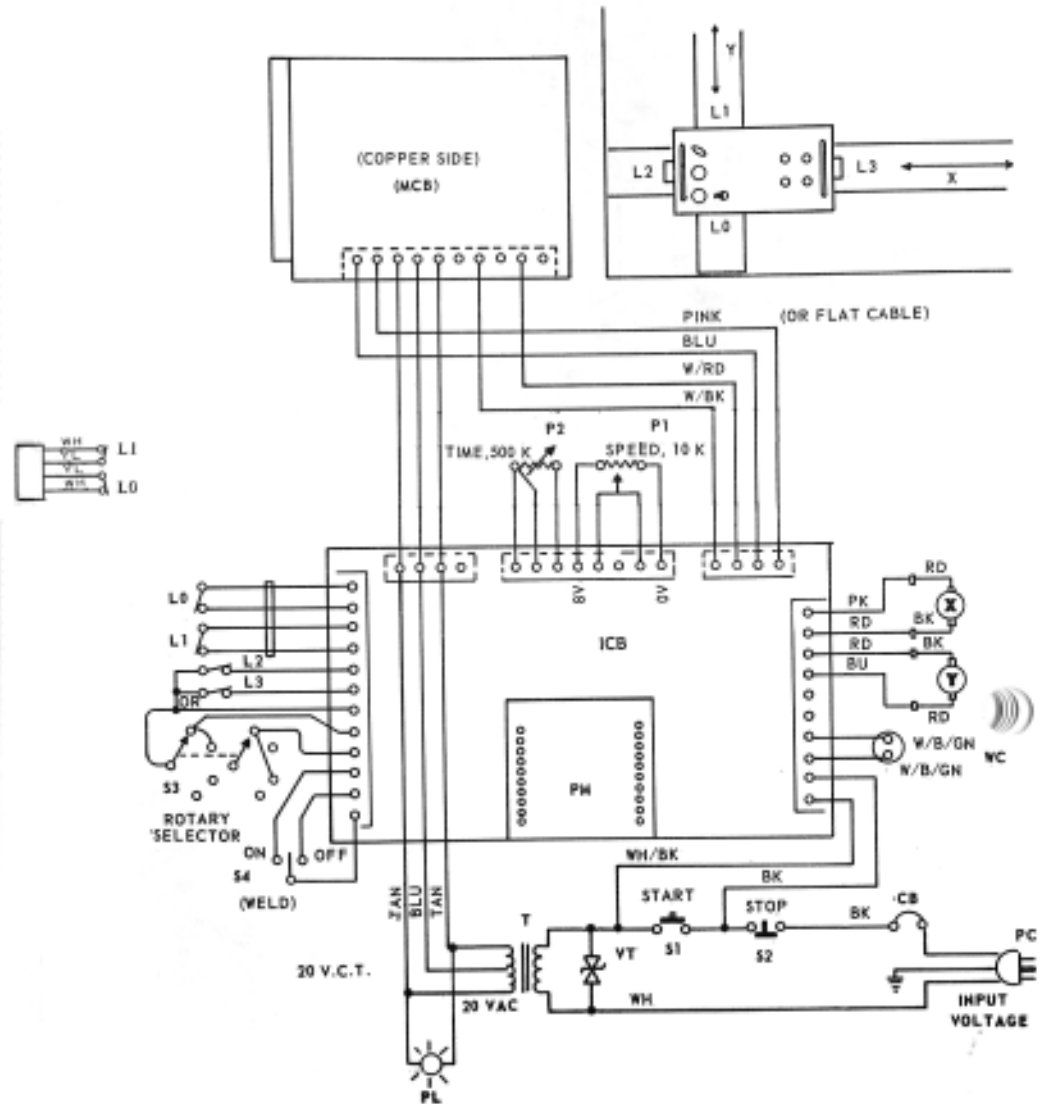
EXPLODED VIEW / BUG-5350



WIRING DIAGRAM



SCHEMATIC



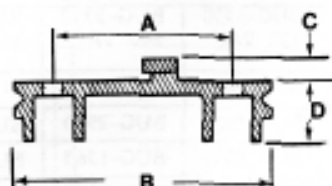
ELECTRICAL COMPONENT CHART

ITEM	DESCRIPTION	PART NUMBER		
		BUG-3330 120 VAC	BUG-3332 240 VAC	BUG-3334 42 VAC
PC	Power Cord	BUG-9445	GOF-3115	BUG-9445
CB	Circuit Breaker	BUG-2923	BUG-2923	BUG-2933
VT	Volt Trap	BUG-1393	BUG-1563	BUG-1393
T	Transformer	BUG-5001	BUG-5002	BUG-5003
PL	Pilot Light	BUG-1427		
MCB	Motor Control Board	BUG-1770		
ICB	Interface Board	BUG-5365		
PM	Program Module	BUG-5370		
S1	Start Button Switch	BUG-1536		
S2	Stop Button Switch	BUG-9801		
WC	Connector-Weld Contact	BUG-9486		
S0	Toggle Sw.-Weld Contact	BUG-5323		
S3	Rotary Switch, Selector	BUG-5363		
P1	Speed Potentiometer 10K	BUG-9686		
P2	Potentiometer, Step Time	BUG-5054		
L0	Limit Switch L.H.	BUG-9577		
L1	Limit Switch R.H.	BUG-9576		
L2,L3	Limit Switches, Longit.	BUG-1417		
X,Y	Gear Motor	BUG-1550		

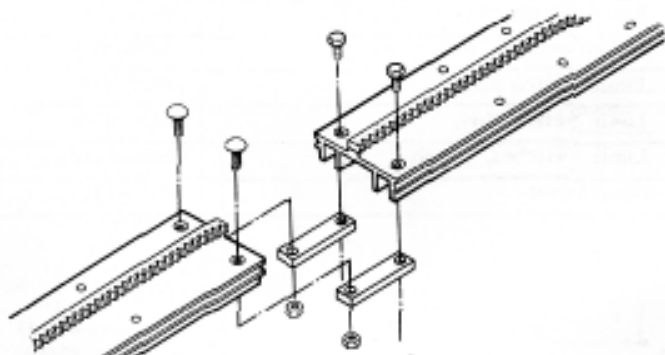
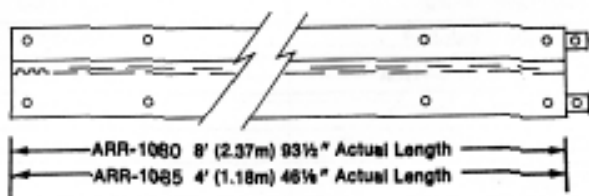
ACCESSORIES:

ARR-1080 8' (2.37m) H.D.Rigid Rail

ARR-1085 4' (1.18m) H.D.Rigid Rail



A - 2.75" (70mm) C - .375" (9.5mm)
B - 4.0" (102mm) D - .875" (22mm)



**MAGNET BAR ASSEMBLY
SWIVEL WITH RELEASE**



TROUBLESHOOTING 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 When Start Button Pushed. Circuit Breaker Tripped.	Wiring Shorts. Tractor Shorted Motor. Faulty Speed Control Board. Burned Out Transformer.	Disconnect Machine And Examine Internally; Rewire At Fault. Reset Breaker, And Plug In: If Breaker Does Not Trip, Replace Tractor Drive Unit. If Breaker Trips Again, Replace Control Board. (OR) Replace Transformer.
Does Not Run, Indicator Light Comes On When Start Button Pushed.	Bad Connection. Faulty Speed Control Board.	Check Wiring Connections, 20 VAC Should Appear Across Secondary Of Transformer. Check Connection On PC Boards. Replace Control Board.
Unit Runs, But No Control Over Speed.	Faulty Speed Control Board.	Replace Control Board. (Check Connection First).
<p>NOTE: Make sure unit is plugged into correct voltage, (120VAC, 240VAC, 42VAC) corresponding to Model No. rating.</p>		