

OPERATING INSTRUCTIONS AND SPARE PARTS LISTS





UN-84 UNIVERSAL DRIVE MOTOR

For Use With All Current Electric Whizard Trimmers

MANUAL #163835 Issued : November 15, 1995 TMC#755

BETTCHER INDUSTRIES, INC. MODEL UN-84 MOTOR Rev. October 17, 2011

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Operating Instructions in other languages are available on request. Additional copies of Operating Instructions are available by calling or writing the local Representative or by contacting :

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The Information Provided In These Operating Instructions Are Important To Your Health, Comfort And Safety. For Safe And Proper Operation, Read This Entire Manual Before Using This Equipment.



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<u>SECTION 1.0</u> <u>MACHINE SPECIFICATIONS</u>

The Bettcher-Bilt Universal Drive Motor is highly effective for use in the meat industry, designed with the highest possible standards for safety, ergonometry and production and yield efficiency.

The Whizard UN-84 Motor Assembly Unit described in this Operation Instruction has been tested by an independent and certified body, Inchcape Testing Services (UK) Ltd, ETL Albury, Cranleigh, Surrey, England and complies with the Low Voltage Directive 73/23/EEC and EMC 89/336/EEC which includes conformity with the following standards :

•EN 50081-1	•IEC 801
•EN 50082-1	•IEC 335-1
•EN 60335-1	



In addition, this product also conforms with the following Swiss standards IEC 745 and HD 400.1 and also conforms with American standards USDA, ANSI 3.34 and UL763. This product is also in conformity with Machine Directive 89/392/EEC prEN/TC153/WG2/N16.5E when used with Whizard UN-84 Trimmers or Whizard Modular Trimmers.

General UN-84 Motor Drive Information :

Weight:	24 lbs. (10.9 kg)
Overall Size:	22" High x 11" Wide x 7-1/2" Deep
Overall Dize.	(530mm) x (280mm) x (190mm)

Power Requirements :

Model 163023:	115 VAC / 1 Phase / 60 Hz	6 Amps
Model 163554:	230 VAC / 1 Phase / 50 Hz	3 Amps

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<u>SECTION 2.0</u> <u>DESIGNATED USE</u>

<u>2.1</u> Warning



2.2 Recommended Operation

The Whizard UN-84 Motor Drive Assembly has been designed for use with the following Whizard Trimmers :

Model		Modular	Model
350	Trimmer	350M	Modular Trimmer
360	Trimmer	360M	Modular Trimmer
500	Bone Trimmer	500M	Modular Bone Trimmer
		500MA	Modular Angle Bone Trimmer
505	Bone Trimmer	505M	Modular Defatting Machine
		505MA	Modular Angle Defatting Machine
520	Bone Trimmer		
		564	Modular Bone Trimmer
620	Bone Trimmer	620M	Modular Bone Trimmer
		620MA	Modular Angle Bone Trimmer
625	Fat Trimmer	625M	Modular Fat Trimmer
750	Trimmer	750M	Modular Trimmer
		754M	Modular Trimmer
850	Defatting Machine	850M	Modular Defatting Machine
		850MA	Modular Angle Defatting Machine
880-B	Primal Fat Shaper (Beef)	880B-M	Modular Primal Fat Shaper (Beef)
880-S	Primal Fat Shaper (Swine)	880S-M	Modular Primal Fat Shaper (Swine)
1850	Defatting Machine	1850M	Modular Defatting Machine
1880	Primal Fat Shaper	1880M	Modular Primal Fat Shaper
1000	Fat And Lean Trimmer	1000M	Modular Fat And Lean Trimmer
1300	Primal Fat Shaper	1300M	Modular Primal Fat Shaper
1400	Ham Finisher	1400M	Modular Ham Finisher
1500	Skinning Machine	1500M	Modular Skinning Machine

<u>SECTION 3.0</u> <u>FUNCTION</u>

<u>3.1</u> Machine Functions

This universal motor drive unit features a 1/3 HP motor which will drive all current electric Whizard Trimmers with all the advantages, the power, and with all the performance to improve your yields and profits.

A vertical motor drives a flexible shaft. The flexible shaft drives a rotating blade in the handpiece via a gear and pinion. The force to cut through meat and fats is now provided by the drive motor and no longer by the worker. Forces applied by the worker are greatly reduced and limited to guiding the rotating knife blade.

The design locks the handpiece in the hanger and shuts the motor off when the handpiece is placed in the hanger.

The motor will not start if the handpiece is in the hanger. An emergency slap-stick stops the unit.

The handpiece has no metal to metal contact with the motor.

3.2 Safety Recommendations And Warnings



3.2 Safety Recommendations And Warnings (Continued)



AVOID USE OF THIS MACHINE IN STANDING WATER.

<u>SECTION 4.0</u> <u>SAFETY FEATURES</u>

The sealed enclosure is extremely water resistant with only one small vent hole.

Switch mechanism is located on top of the motor and is completely enclosed under the motor cover for protection from moisture.

Bottom mounted extra long on/off switch rod.

Strain relief design allows motor to be free-swinging.

The machine has an interlock on the handpiece hanger that prevents hanging the handpiece while the motor is running or turning the motor on while the handpiece is in the hanger. The motor will shut off automatically if the handpiece is placed into the hanger.

<u>SECTION 5.0</u> <u>INSTALLATION</u>

Correct installation is extremely important to achieve maximum efficiency for both the Whizard Trimmer unit being used and the operator. Incorrect installation may possibly hamper the operator's movements and cause undue wear or damage to the flex shaft and flex shaft casing parts of the unit.

5.1 Space Requirements

CAUTION

IT IS STRONGLY RECOMMENDED THAT A SAFETY CABLE OR CHAIN BE INSTALLED THROUGH THE SUPPORT YOKE AND AROUND A FIXED OVERHEAD STRUCTURE.

A 3/4" diameter pipe should be fastened to an overhead beam with the pipe centerline 12 inches (300mm) to the right of the operator's shoulder for a right-handed operator (or 12 inches (300mm) to the left of the operator's shoulder if the operator is left-handed). Pipe centerline for Small Tool Models should be 12 inches (300mm) back from the front edge of the table and 15 inches (380mm) back from the front edge of the table for the Large Tool Models (see Figure 1). The pipe should be long enough to provide vertical clearance between the motor to the casing adapter and the top of the table surface. Actual clearance dimensions vary between Whizard tools -see listing of tools as illustrated in Figure 1. (Table top height may be set differently based on operator height and the height of the meat product on the table).

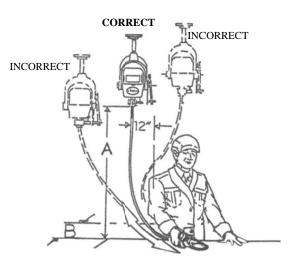
The yoke should be rigidly mounted and parallel to the work station.

5.1 Space Requirements (Continued)

CAUTION

IMPROPERLY HUNG MOTORS MAY RESULT IN EXCESSIVE OPERATOR EFFORT & DECREASE IN MOBILITY. INCREASED FATIGUE & LOSS OF EFFICIENCY MAY OCCUR.

For further details on the ergonomic design considerations to the work station, please refer to the Whizard Trimmer Ergonomic Manual. Copies may be obtained by making the request to Bettcher Industries at the contact locations listed in the back of this manual.





Model	A	В
350/350M	28''	12''
360/360M	28''	12''
500/500M/500MA	28''	12"
505/505M/505MA	40''	12''
520	28''	12"
564M	28''	12''
620/620M/620MA	28''	12''
625/625M	28''	12''
750/750M	42''	15''
754M	42''	15''
850/850M/850MA	42''	15''
880/880M-B&S	42''	15''
1000/1000M	42''	15''
1300/1300M	42''	15"
1400/1400M	42''	15"
1500/1500M	42''	15"
1850/1850M	42''	15"
1880/1880M	42''	15''

A = Distance from Motor to Casing Adapter to Center Line of Product

B = *Distance Out from Table Top*

5.2 Installation

Install the motor in the proper position as shown and described in Section 5.1.

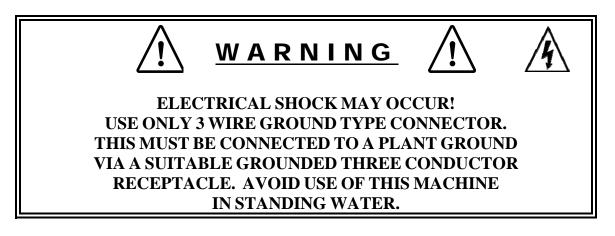
Install the flex shaft assembly to the motor disconnect by lifting the disconnect collar and inserting the adapter end of the casing into the disconnect body.

It may be necessary to rotate the casing assembly to align the square drive of the flex shaft with the square hole in the motor shaft adapter.

Release the disconnect collar to secure the casing to the motor assembly. The flex shaft casing assembly should swivel freely.

5.3 Connecting The Power

Connect the motor power cord to the prescribed voltage on the motor nameplate. The motor must be connected to a ground. Use only approved type connector.



Refer to the Wiring Diagrams in Section 8.0

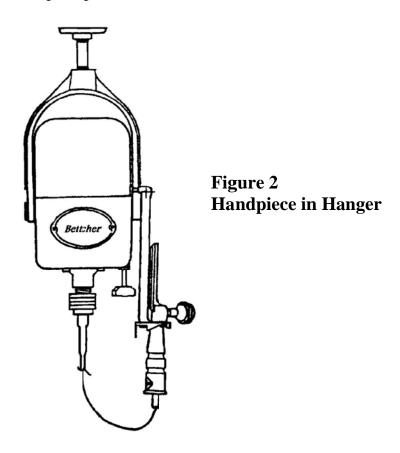
<u>SECTION 6.0</u> <u>INSTRUCTIONS FOR OPERATION</u>

The hanger is designed to hold the handpiece with the blade facing toward the flipper and the motor turned off. This feature is to discourage the unsafe practice of hanging the handpiece with the blade rotating and requires removing the handpiece from the hanger in order to start the motor.

On/Off Procedure : Remove the handpiece from the hanger, lifting the metal catch with one finger as you pull the handpiece out. With your other hand, turn the switch knob clockwise to start the motor.

On/Off Procedure With Disconnect Casing Assembly (Modular Trimmers Only) : Remove the handpiece from the hanger, lifting the metal catch with one finger as you pull the handpiece out. The Quick Disconnect can be used with the motor either running at the time of engagement or with the motor off.

The motor can be turned off by turning the switch knob counterclockwise or by tripping the hanger flipper. Turn the motor off before placing the handpiece in the hanger to prevent dulling the blade on the flipper. Push the handpiece into the holder until catch drops in place.



6.1 Fault Detection And Correction

Problem	Probable Cause	Remedy
	No power to motor	Check line voltage. Make sure line voltage matches motor spec. plate
Motor Will	Bad power cord or plug	Check voltage at cord to switch point. Refer to Sections 8.3, 8.4, and/or 8.5 for proper schematic
Not Run	Loose wire connections	Tighten loose connections
	Bad circuit breaker (230V Only)	Try reseting breaker or replace breaker if defective (refer to Section 8.4)
	Bad switch	Check switch and replace if defective
Motor Noisy	Bad bearing in motor	Remove and replace
Handpiece	Machine not installed correctly in relation to operator position	Check installation procedures in Section 5.1
Vibration	Flex shaft/motor adapter worn	Replace adapter (Part Number 143077)

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6.2 Instructions On Safety For Personnel







ALWAYS DISCONNECT POWER AND REMOVE THE TOOL FROM THE FLEX SHAFT CASING PRIOR TO SERVICING.



IF AT ANY TIME THIS MACHINE DOES NOT APPEAR TO OPERATE NORMALLY, OR EXHIBITS A MARKED CHANGE IN PERFORMANCE, IT SHOULD BE IMMEDIATELY SHUT DOWN AND TAGGED AS "UNSAFE" UNTIL SUCH TIME AS PROPER REPAIRS ARE MADE AND THE MACHINE AGAIN OPERATES NORMALLY.

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<u>SECTION 7.0</u> <u>MAINTENANCE</u>

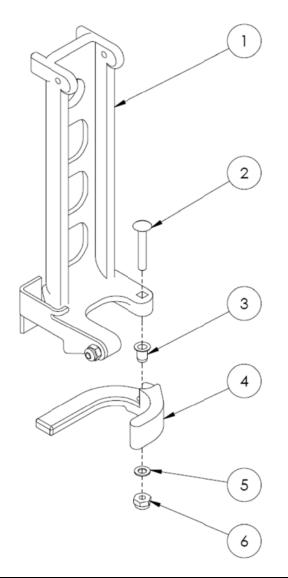
Make sure the motor unit pivots freely in the yoke. Check that the pivot bolts and pivot sleeve bearings are in good condition. If required, clean pivots and change the sleeve bearings.

Check to make sure the power cord connector is tight in the bell cap. Tighten as required.

Periodically check the condition of the flex shaft casing to motor disconnect. Make sure the balls move freely and the casing rotates freely in the disconnect.

<u>SECTION 8.0</u> <u>SPARE PARTS LIST</u>

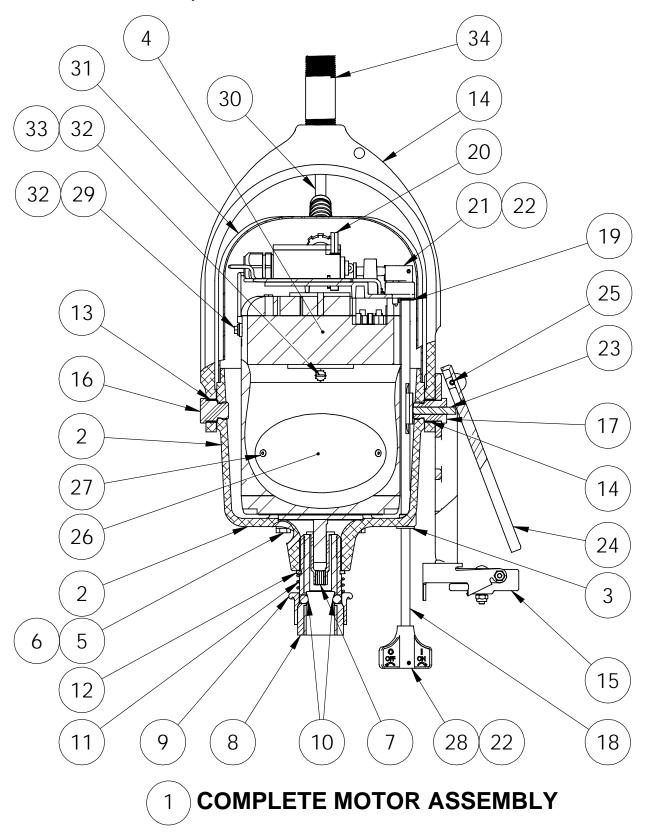
8.1 Handpiece Hanger



ITEM	DESCRIPTION	PART NUMBER	QTY. USED
1	HANGER/CATCH ASSEMBLY	143679	1
2	BOLT	143199	1
3	FLANGED SPACER	122275	1
4	LATCH	143671	1
5	WASHER	120280	1
6	NUT	123609	1

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8.2 Motor Assembly

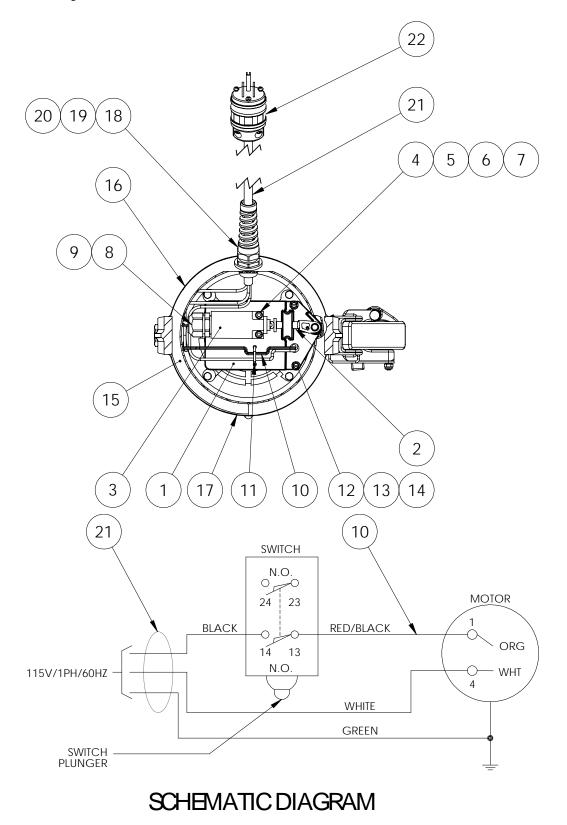


<u>8.2</u> <u>Motor Assembly (Continued)</u>

ITEM	DESCRIPTION	115 V 1 PH 60 I	ASE HZ	230 V 1 PH 50 I	ASE HZ
		P/N	QTY	P/N	QTY
1	COMPLETE MOTOR ASSEMBLY	163023	1	163554	1
2	END BELL ASSEMBLY	143074	1	163900	1
	(INCLUDES SWITCH ROD BUSHING)				
3	SWITCH ROD BUSHING	143125	REF.	143125	REF.
4	MOTOR	163057	1	163058	1
5	LOCK WASHER	120220	4	120220	4
6	BOLT	120576	4	120576	4
7	FLEX SHAFT/ MOTOR ADAPTER	143077	1	143077	1
	DISCONNECT ASSEMBLY	163190	1	163190	1
	INCLUDES ITEMS; 8 THRU 12				
8	DISCONNECT BODY	143112	1	143112	1
9	DISCONNECT COLLAR	143113	1	143113	1
10	BALL	143114	2	143114	2
11	SPRING	121610	1	121610	1
12	RETAINING RING	122025	1	122025	1
13	SLEEVE BEARING	121751	2	121751	2
14	MOTOR SUPPORT YOKE	143161	1	143161	1
15	HANGER ASSEMBLY	143691	1	143691	1
	(SEE HANDPIECE SECTION FOR				
	DETAIL)				
16	PIVOT BOLT	143117	1	143117	1
17	PIVOT INTERLOCK BOLT	143674	1	143674	1
18	SWITCH ROD	143132	1	143132	1
19	E-RING	122024	1	122024	1
20	LIMIT SWITCH ASSEMBLY	173660	1	173661	1
21	SWITCH CAM	185767	1	185767	1
22	SPRING PIN	120166	2	120166	2
23	SHUT-OFF PIN	143675	1	143675	1
24	FLIPPER	143672	1	143672	1
25	SLOTTED SPRING PIN	122432	1	122432	1
26	NAME PLATE	143129	1	163446	1
27	POP RIVET 1/8"	122744	2	122744	2
28	SWITCH ROD KNOB	163014	1	163014	1
29	SCREW (PART OF MOTOR)	122730	1	122730	2
30	POWER CORD	163018	1	163580	1
31	BELLCAP ASSEMBLY	163044	1	163895	1
32	LOCK WASHER	120232	3	120232	4
33	SCREW	120775	2	120775	2
34	PIPE NIPPLE	143212	1	143212	1

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8.3 Top View Of 115V Motor With Schematic



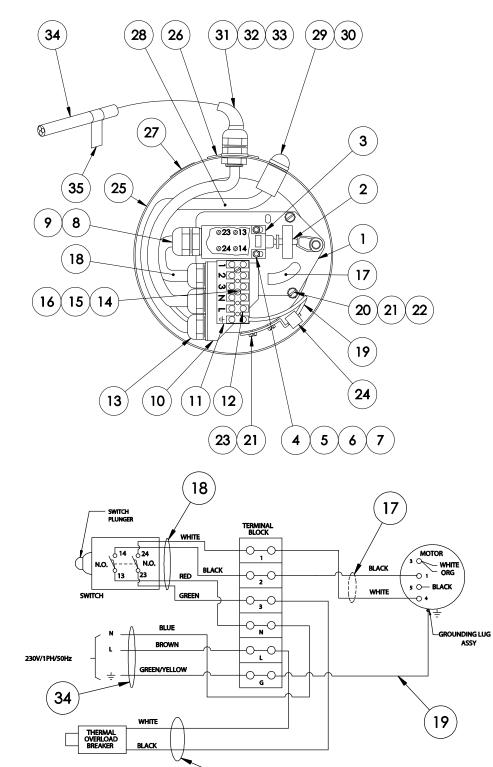
8.3 Top View Of 115V Motor With Schematic (Continued)

ITEM	DESCRIPTION	1 PH	115 VOLTS 1 PHASE 60 HERTZ		
		P/N	QTY		
	LIMIT SWITCH ASSEMBLY INCLUDES ITEMS; 1 THRU 9	173660	1		
1	SWITCH MOUNTING PLATE	173663	1		
2	SWITCH PLUNGER	173662	1		
3	LIMIT SWITCH	124969	1		
4	SOCKET HEAD CAP SCREW	122514	2		
5	WASHER	120298	2		
6	LOCKING WASHER	120201	2		
7	STANDOFF	122258	2		
8	O-RING	122327	1		
9	CONNECTOR	123612	1		
10	SWITCH/ MOTOR WIRE (RED/ BLACK)	163017	1		
11	PLASTIC TIE CLAMP	120982	1		
12	WASHER	120260	2		
13	LOCK WASHER	120235	2		
14	SCREW	122765	2		
	BELL CAP ASSEMBLY INCLUDES ITEMS; 15 THRU 19	163044	1		
15	BELL CAP	163015	1		
16	WARNING LABEL	103709	1		
17	CAUTION LABEL	163031	2		
18	SEAL	105245	1		
19	CONNECTOR	124961	1		
20	LOCK NUT	122653	1		
21	POWER CORD	163018	1		
22	MALE PLUG	103413	1		

ALSO AVAILABLE:

DESCRIPTION	P/N	QTY
ACTUATOR - CENTRIFUGAL	125862	1
BEARING SHAFT	125865	2
SWITCH - STATIONARY	125863	1

8.4 Top View Of 230V Motor With Schematic



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8.4 Top View Of 230V Motor With Schematic (Continued)

ITEM	DESCRIPTION	230 VC 1 PHA 50 HE	ASE
		P/N	QTY
	LIMIT SWITCH ASSEMBLY	173661	1
	INCLUDES ITEMS; 1 THRU 16	175001	1
1	SWITCH MOUNTING PLATE	173663	1
2	SWITCH PLUNGER	173662	1
3	LIMIT SWITCH	124969	1
4	SOCKET HEAD CAP SCREW	122514	2
5	WASHER	120298	2
6	LOCKING WASHER	120201	2
7	STANDOFF	122258	2
8	O-RING	122327	1
9	CONNECTOR	123612	1
10	STRAIN RELIEF BRACKET	163582	1
11	TERMINAL BLOCK ID PLATE	163621	1
12	TERMINAL BLOCK	124833	1
13	STRAIN RELIEF BUSHING	124829	3
14	WASHER	120282	2
15	ROUND HEAD SLOTTED SCREW	120202	2
16	LOCKING NUT	123608	2
10	MOTOR/ TERMINAL BLOCK CABLE	163576	1
17	TERMINAL BLOCK/ SWITCH CABLE	163579	1
19	GROUND WIRE (GREEN/ YELLOW)	163670	1
20	WASHER	120260	2
20	LOCK WASHER	120235	4
21	SCREW	120233	2
		122703	2
23	SCREW (PART OF MOTOR)	122/30	2
24	LUG ASSEMBLY, SOLDERLESS,	124849	1
	2 HOLE, 6-14 AWG		
	BELL CAP ASSEMBLY	163895	1
25	INCLUDES ITEMS; 25 THRU 29	1 () 5 7 7	1
25	BELL CAP	163577	1
26	WARNING LABEL	103709	1
27	LABEL, SPLASHPROOF	163638	1
28	CIRCUIT BREAKER/	163581	1
•	TERMINAL BLOCK CABLE	124026	
29	CIRCUIT BREAKER	124836	1
30	PUSH BUTTON BOOT	124837	1
31	SEAL	105245	1
32	CONNECTOR	124961	1
33	LOCK NUT	122653	1
34	POWER CORD	163580	1
35	WIRING GUIDE TAG	163591	1

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<u>SECTION 9.0</u> <u>ABOUT THESE OPERATING INSTRUCTIONS</u>

<u>9.1</u> Other Languages

Translations into any of the languages used in the European Union are available at cost price upon request. Call or write the local Distributor or contact Bettcher Industries.

9.2 Document Identification

Copies of this Operating Instruction may be ordered by quoting the Document ID as listed below :

Document ID :	Manual # 163835
Document Description :	Operating Instructions And Spare Parts
	List For Bettcher-Bilt [™] UN-84
	Universal Drive Motor
Issued :	August 28, 1995

Operating Instructions for other Whizard Drive Units and/or Whizard Trimmers may be requested by quoting the model designation of the unit as shown on the identification plate on the unit.

9.3 Software And Duplication

This document has been created with Microsoft Word for Macintosh and set in Palatino 12 points for A-size paper (8.5 x 11 inches).

It can be provided to users of the Bettcher-BiltTM UN-84 Universal Drive Motor, in this and other popular word processor formats. If you are a user of the Bettcher-BiltTM UN-84 Universal Drive Motor and wish to include these Instructions in your own Operating, Safety or Good Manufacturing Practice Manuals, request a copy on diskette, specifying your preferred file and media format. For more information, contact your local Representative or :

BETTCHER INDUSTRIES, INC. Administrative Assistant/Engineering Department P.O. Box 336 Vermilion, Ohio 44089 U.S.A.

SECTION 10.0 CONTACT ADDRESSES AND PHONE

For additional information, technical support and spare parts, contact your local Representative, Distributor, or Bettcher Representative :

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