

Sommer & Maca Machinery

MODEL BM-106G & BM-132

WET ABRASIVE BELT MACHINES

OPERATION AND MAINTENANCE MANUAL

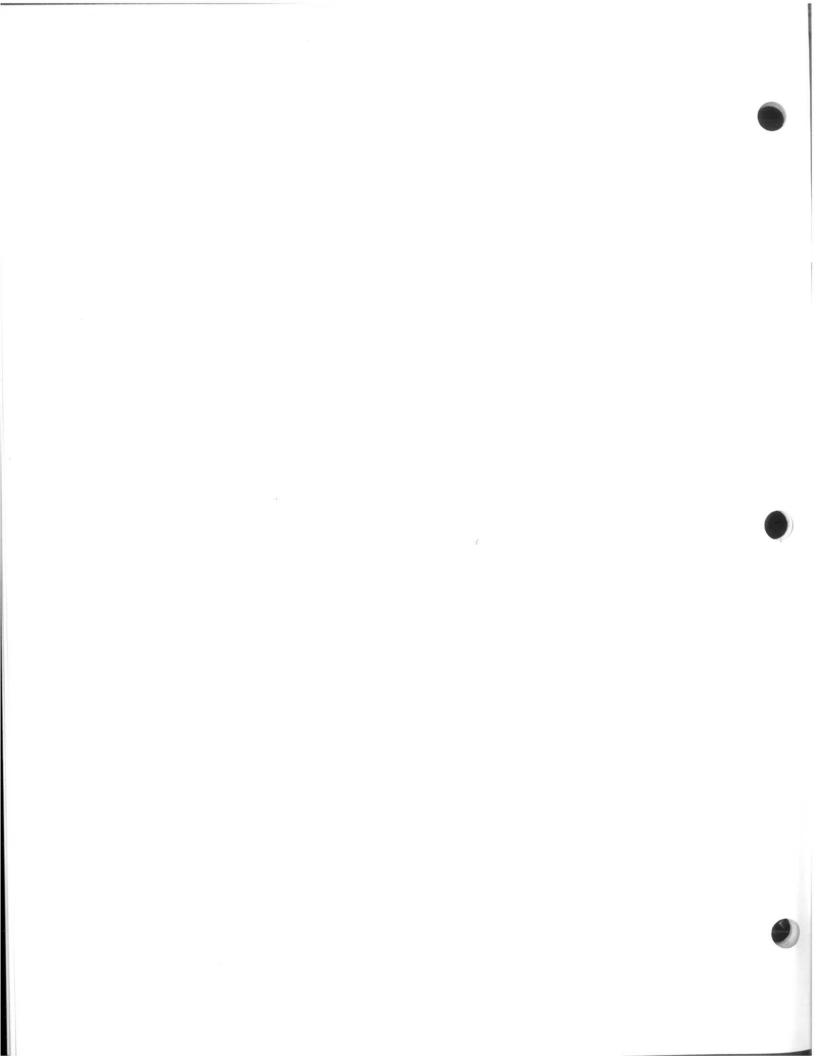




Made In The U.S.A.



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FOREWORD

Your new SOMACA belt machine is the result of 70 years experience in quality machine building.

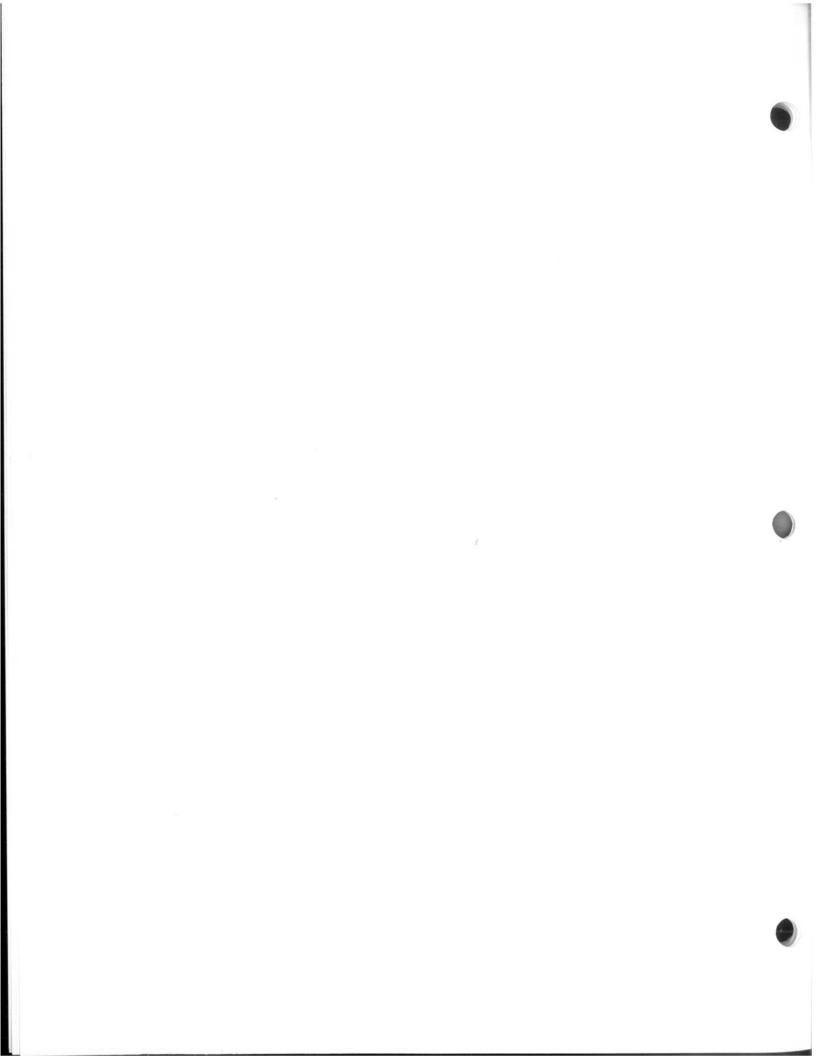
This machine will give years of dependable service if it is properly cared for. Most machinery problems are caused by lack of maintenance or by misuse. The following sheets contain instructions for the installation, operation, and maintenance of SOMACA BM-106G and BM-132 belt machines.

If questions arise concerning the machine or spare parts, call or write us. We will be glad to help.



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DESCRIPTION & SPECIFICATIONS

I. BM-106G BELT MACHINE

Wet Abrasive Belt Machine for Rough Grinding, Smoothing and Polishing of Glass For Use with 4" x 106" Belts

SPECIFICATIONS

Abrasive Belts

This machine uses standard 4" x 106" abrasive belts. *One* 80 grit belt (253-7080), a pair of goggles and a safety shield (262-2030) are furnished with each machine.

Frame

Heavy gauge steel, welded construction.

Motor

1 HP, 110/220 volt, 60 cycle, single phase, 3450 RPM, capacitor-type wired to toggle switch, cord and plug. All machines are wired for 110 volts unless otherwise specified.

Pulleys (Idler and Driven)

5" diameter, cast iron, machine trued and balanced.

Belt Tension Device

Eccentric type with locking handle, and control knob for tracking.

Type of Platens Available

- A. Rubber Contact Roller Platen. 24" long glass rest and five 3" diameter wheels.
- B. Flat Metal Cushioned Platen.
- C. Double Roller Platen.

Bearings

Sealed standard ball bearings throughout in cast iron housings.

Coolant System

Water supply line with solenoid control valve and low consumption water spray nozzle (3.5 gph @ 30 psi) for wet grinding of glass. The water is automatically turned on when the motor is started.

Standard Models

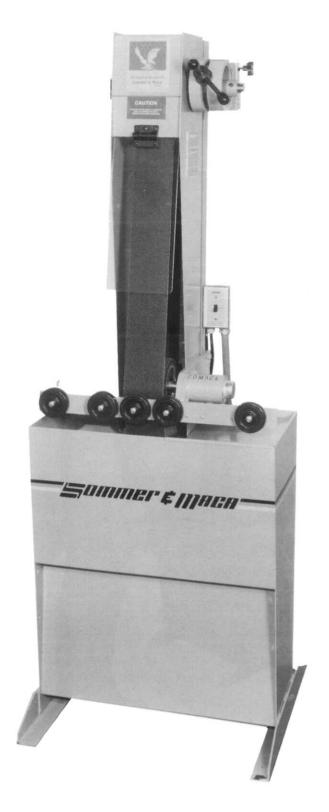
BM-106G-RP standard is illustrated with rubber contact roller platen and single phase motor.

BM-106G-3M is furnished with metal cushioned platen (SM3M-106) instead of rubber contact roller platen, and single phase motor.

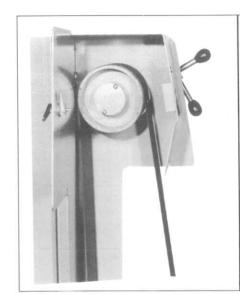
DIMENSIONS

Width Depth Height Shipping Weight

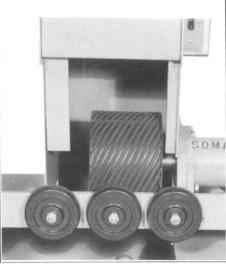
24" 23" 72" 350 lbs.



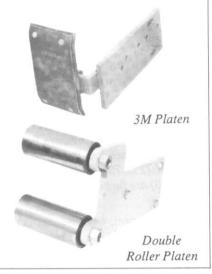
Some Important Features of the 106G



Quick Change Belt/Pulley Assembly



Rubber contact roller platen with a 24" glass rest. Comes with five 3" diameter wheels.



3M flat metal cushioned platen for 106G-3M model. Optional, double roller platen to seam, miter or pencil edge.



BM-106G-RP shown with Rubber Contact Roller Platen and No. 262-1004 48" Extension Arm - One Piece (Optional) (Extension Arms available in Two - 24" Arms, No. 262-2024)



The traveling table can be a great asset to shops that have requirements to seam large lites of glass and mirror. The unit glides on a 12′ monorail and is attached by brackets to the side of the machine. Two grooved 5" steel wheels ride effortlessly over the rail. The wood table top is made from select northern pine.

Dimensions 30" x 50" Weight 300 lbs. w/rails

II. BM-132 BELT MACHINE

Heavy Duty Wet Abrasive Belt Machine for Rough Grinding, Smoothing and Polishing Edges of Glass

MODELSBM-132 RP: Furnished complete as illustrated in photo with rubber

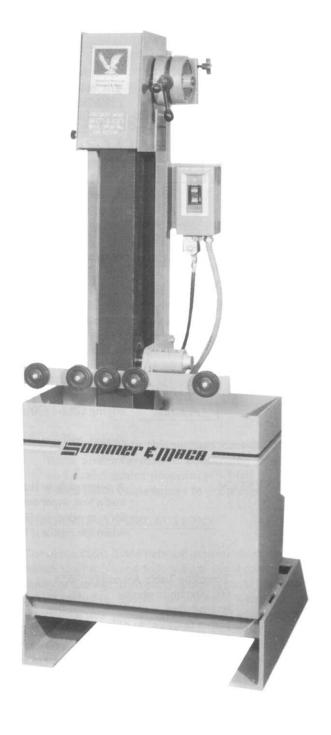
contact roller platen.

BM-132 DRP: Furnished with

double roller platen.

DIMENSIONS

Width Depth Height Shipping Weight 28" 33" 74" 700 lbs.



BM-132 BELT MACHINE SPECIFICATIONS

FRAME Structural steel angles from the base; heavy gauge steel is used for the frame enclosures in a rugged, welded construction.

button starter.

PULLEYS Both pulleys are 8" dia., cast iron, machined and balanced.

BELT TENSION DEVICE Eccentric type with locking handle and control knob for track-

ing the belt.

PLATENS Rubber contact roller

with 24" glass rest. Double roller platen (right), for seaming, mitering or pencil edging (262-1320).



BEARINGS Sealed ball bearings and standard ball bearings (Fafnir or

equal).

COOLANT SYSTEM A water supply line with an electrical solenoid control valve

and a low water consumption spray nozzle (3.5 gph @ 30 psi) for wet grinding. The water supply is automatically turned on

when the motor is turned on.

OPTIONSTraveling Table Assembly: 36" x

60", shown in photo.

Extend glass rest for contact roller platen from 24" to 48":

No. 262-1014, 48" Extension Arm - One Piece.

No. 262-2024,

Two - 24" Extension Arms.

Pictured is Model BM-132 DRP with optional Traveling Table Assembly.

SAFETY

FAILURE TO OBSERVE THE WARNINGS, CAUTIONS, AND INSTRUCTIONS LISTED IN THIS MANUAL AND ON THE DECALS ATTACHED TO THE BELT MACHINE COULD CAUSE SERIOUS INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

I. GENERAL SAFETY INFORMATION

A. Introduction

This manual contains installation instructions and operating and maintenance procedures for the BM-106G and BM-132 belt machines. The belt machine must be operated and maintained at all times in accordance with the instructions and procedures contained in this manual and on the decals attached to the machine. Only qualified personnel thoroughly familiar with the operating and maintenance instructions should operate and maintain this equipment.

B. Safe Operating Considerations

Safety must be observed through all facets of operation and maintenance. Proper tools and operating procedures must be used at all times to prevent accidents which could cause injury to personnel or damage to equipment.

Safe, reliable operation and long service life are dependent upon three important considerations:

- Care exercised during installation.
- Quality and frequency of inspection and maintenance.
- Common sense approach to operation.

II. NOTES, CAUTIONS AND WARNINGS

A. Notes:

Note

The notes contained throughout this manual provide additional information to carry out the operating and maintenance procedures.

B. Cautions:

CAUTION

The cautions in this manual contain instructions and information concerning operation and maintenance procedures which if not followed could cause damage to equipment, parts, and facilities.

C. Warnings:

WARNING

The warnings in this manual contain instructions and information concerning operation and maintenance procedures which if not followed could cause injury to personnel.

III. GENERAL PRECAUTIONS

The precautions listed here are general in nature; however, failure to observe and follow them could result in personal injury or damage to property. These general precautions are not all-inclusive. Specific cautions and warnings are listed throughout this manual, and additional ones may occur to the user which are peculiar to a particular operation or industry. In addition, employers are subject to the federal Occupational Safety and Health Act (OSHA) of 1970, as amended, which requires that an employer keep abreast of the regulations which will continue to be issued under its authority.

1. Always operate and maintain the belt machine in accordance with the instructions and procedures in this manual.

SECTION 2 - Safety Cont.

- 2. Do not open machine doors while unit is in operation.
- 3. Never work on the belt machine unless electrical power has been locked out and tagged or completely disconnected.
- 4. Do not use the belt machine for any purpose for which it was not designed. It is to be used solely for rough grinding, smoothing and polishing of glass.
- 5. Do not poke or prod into the machine with a bar or stick.
- Keep area around the belt machine dry, and free of debris and obstacles.
- 7. Never operate the belt machine without guards in position and functioning.
- 8. Always allow the belt machine to stop naturally. Do not attempt to artificially brake or slow the motion of the belt machine.
- 9. Always wear safety glasses, proper (glass) gloves, dust respirator, and other necessary safety equipment while operating and maintaining the belt machine. When in doubt, consult with shop safety representative.
- 10. Always wear safety glasses, proper (glass) gloves, and other necessary safety equipment while handling glass. When in doubt, consult with shop safety representative.

SECTION 3

INSTALLATION

I. FLOOR AREA

The machine should be placed solidly in position, leveled and, if possible, bolted to the floor. Allow enough area to permit access to the rear of the machine.

The floor area should be clean of oil, grease and water.

II. PLUMBING

Connect the machine water line (customer supplied) to the shop water supply. It is recommended to use a permanent type of installation, i.e. galvanized pipe or copper tubing with a gate shutoff valve for overnight or weekend turnoff. The fitting on the solenoid valve is a 1/4 inch F.P.T. Also, make a provision to drain the water from the machine's drain pan to a sewer or a recycling system. If this is not feasible a pail may be placed by the drain pan discharge outlet.

III. ELECTRICAL

Connect the plug to the shop electrical outlet, first checking to insure that the outlet voltage matches the motor wiring.

CAUTION

Make sure machine has proper electrical ground connection.

OPERATING INSTRUCTIONS

I. ABRASIVE BELT

NOTE

When machine will not be used for long periods, release the abrasive belt tension.

The abrasive belt should run downward as the operator faces the working side of belt. Some belts are marked on the inside with an "arrow" to indicate the proper direction of travel. If the belt is run backward, the salvage end of the lap joint will hit the glass, causing the belt to come apart.

- 1. Open the main water valve and turn on the belt machine. The electrical solenoid valve will open only when the motor switch is on.
- 2. Adjust the water valve on the water line assembly, to permit a full spray of water on the belt. Use the *main* water valve to shut off the water after grinding, not the water valve on the machine.

WARNING

Do not grind glass without the water spray. Glass dust from a dry grinding can be injurious to the operator's health.

II. GRINDING

- 1. The application of the glass and the choice of belt grit are largely a matter of individual operator's preference, but the following procedures are submitted as a guide for general work using either the contact roller platen or the 3M metal cushioned platen.
- 2. To obtain a round or pencil edge, use a coarse grit belt and lightly seam the sharp edges left from cutting by running or swiping glass quickly across the belt. This will reduce the chipping of the glass during succeeding grindings. Then draw the glass slowly across the unsupported area of the belt, above the platen, and at the same time tilt the glass up and down until the desired contour is obtained. Finish the edge on a smoothing belt and polish if desired.

- 3. For a flat, seamed edge, use a belt of medium grit and lightly seam the edges as above. Next, grind the entire edge flat by applying the glass squarely to the platen. Change to a finishing or smoothing grit and go over the flat edge again, then seam both sides of the glass by tilting the glass about 45 degrees and running it across the belt on the platen.
- 4. Rough grinding can be done with abrasive belts in grit sizes 40 through 120. Belts of 150, 180, 220 and 280 grit are for smoothing; grits 320 and 400 are for satin finishing. Cork belts are used for high polish. SOMMER & MACA carries a complete stock of Wet Abrasive Belts for immediate shipment. "Formax" (No. 259-9026) and Belt Polishing Oil (No. 259-9065) are also carried in stock. Worn belts, even in the coarse grits, can be used for smoothing and finishing.

WARNING

When grinding, always wear safety glasses, dust respirator (rated to protect against glass dust), proper gloves and protective clothing.

MAINTENANCE INSTRUCTIONS

I. ABRASIVE BELT REPLACEMENT

- 1. Check the arrow inside the belt to be sure that it points in the proper direction of travel, then slip it over the bottom pulley.
- 2. Loosen the pulley bracket lockscrew so that the eccentric is loose. Pull the eccentric handle down, then slip the belt over the top pulley.
- 3. Push the eccentric handle upward until the belt is tight. Allow 1/2 inch to 3/4 inch slack in the belt for proper tension. Then lock the eccentric in position by tightening the pulley bracket handle. *Do not over tighten!*
- 4. The belt should ride in the center of both pulleys. To check this, pull the belt through by hand. If the belt drifts, use the tracking control knob and turn it clockwise or counterclockwise, as the case may be, until the belt is centered on both pulleys.

II. BELT PULLEYS

After a year or two of continued machine use, the belt pulleys will wear and require re-machining or replacement. If, after centering adjustments have been made on the upper tracking control knob the abrasive belt fails to track properly, check the pulley by placing a straightedge (6" or 12" rule) across the surface. A new pulley at this point will have a noticeable hump or crown in the center. A worn pulley will be flat or have a valley in its center. If the pulley is worn, a one (1) degree crown should be re-machined on the surface.

III. SPRAY NOZZLE

The spray nozzle will function properly only as long as it is kept clean. It should be disassembled periodically and the metal screen brushed clean. If water continues to drip from the nozzle when the switch is off, disassemble the water valve; clean the poppet valve and the valve seat.

IV. CONTACT ROLLER PLATEN

Using a grease gun, with a good grade of chassis grease, grease the five fittings on the contact roller platen wheels. This should be done *weekly* to flush out any grit which has collected and will prolong the life of the axles and rollers. Wipe off excessive grease.

V. LOWER BEARINGS (BM-132)

On the Model BM-132 are two additional grease fittings. They are located on the lower bearing housing and should be lubricated every three months. Apply grease to both fittings.

VI. MOTOR V-BELT

Check motor V-belt tension periodically and adjust if necessary. The V-belt should be tensioned so it fits snugly in both V-pulleys. It should have a 1/4 inch (maximum) deflection, when pressed in the center of the belt with light finger pressure.

VII. GENERAL MAINTENANCE

- 1. Wipe down the belt machine at the end of each work day.
- 2. Clean drain pan thoroughly once a week.

NOTE

Follow manufacturer's recommendations for lubrication of motor.

TROUBLE SHOOTING PROCEDURES

Problem

The abrasive belt does not track

The abrasive belt slips or stops under load

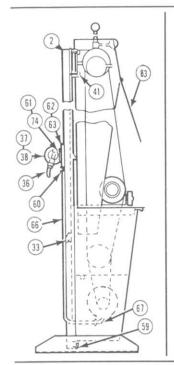
Lower bearings rattle (applies only to the BM-132)

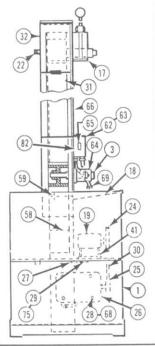
Lower bearings need frequent replacement (applies only to the BM-132)

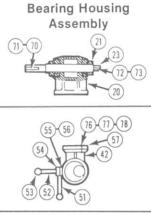
Possible Solution

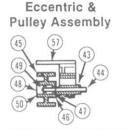
- 1. Check for proper pulley crown. If the pulleys are worn:
 - A. Send to machine shop if there is sufficient metal and resurface to a 1 degree crown.
 - B. Check for alignment between upper and lower pulleys by using a 48" long straightedge. The four outer rims (2 on each pulley) should be vertically in line.
 - C. If necessary replace pulley(s).
- The belt tension is too loose, possibly, because the belt has stretched with use. Tighten the abrasive belt. Note: when machine will not be used for long periods, release the belt tension.
- Check V-belt drive under the machine. The V-belt should be tensioned so that it fits snugly in both V-pulleys. It should have a 1/4 inch (maximum) deflection, when pressed in the center of the belt with light finger pressure.
- Remove sanding belt and start motor. If the lower bearings rattle or if there is play between the shaft and the bearings, replace the bearings in the housing.
- 1. The fit on the shaft or in the housing is too loose (more than 0.001" play is excessive).
- 2. The sanding belt is overtensioned. There should be 1/2" to 3/4" free movement of belt between the upper pulley and the rubber pulley or platen. There should be no more than 1" free movement of the abrasive belt between the upper pulley and lower pulley when no platen is used.
- Lubrication is not done on schedule. See Section 5, Paragraph V.

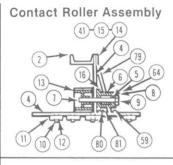
PARTS LIST BM-106G (1987-PRESENT)

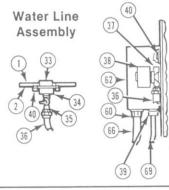






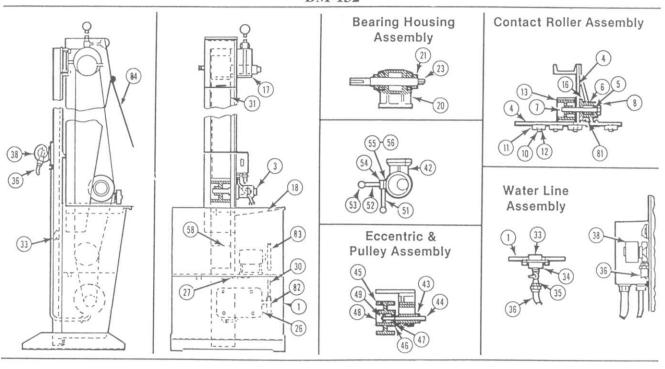








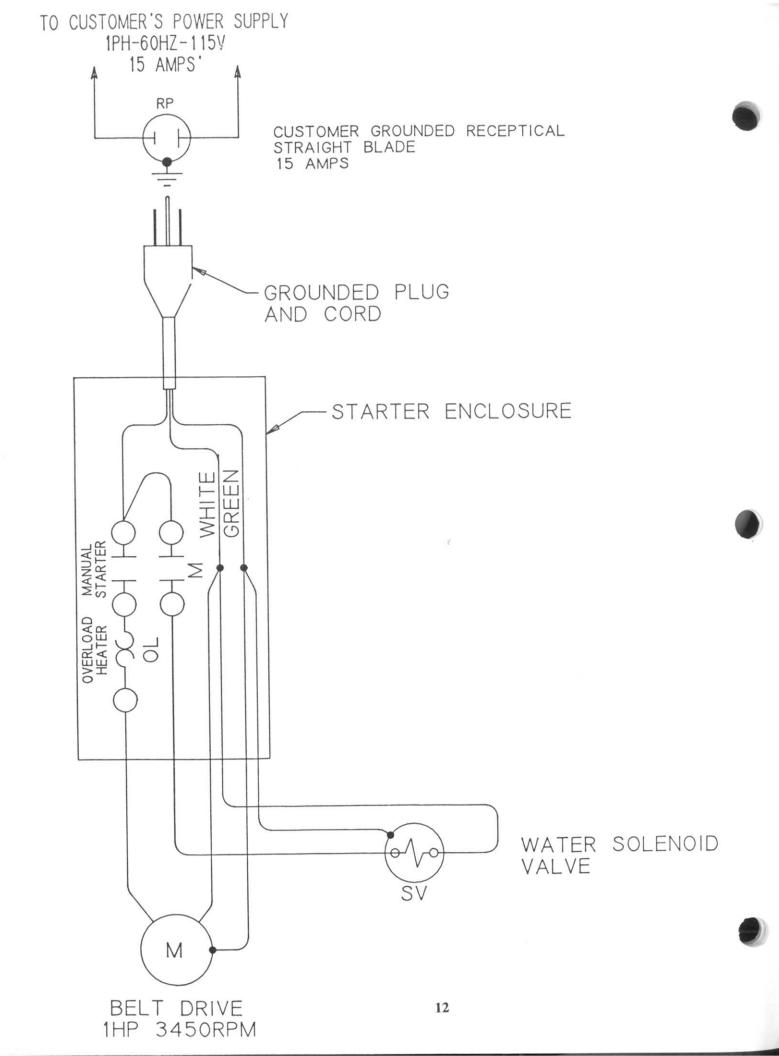
SECTION 7 PARTS LISTS BM-132



	PART NO.	DESCRIPTION & QTY.
1	3-77395-00	FRAME (1)
3	3-55872-00	CONTACT ROLLER ASSEMBLY (1)
4	3-55874-01	ROLLER MOUNTING BAR (1)
5	C52-2772-1	INTERNAL SPIROLOX RING (2)
6	3-56182-00	BEARING HOUSING (1)
7	3-55863-00	ROLLER SHAFT (1)
8	C41-5935-0	BEARING, FAFNIR RA100RR-SEAL (2)
10	C64-0062-0	ALEMITE GREASE FITTING (5)
11	C63-0001-0	PAYSON BUSHED RUBBER ROLLER (5)
12	3-69888-03	SHOULDER SCREW (5)
13	3-55858-00	RUBBER COVERED CONTACT ROLLER (1)
17	3-77476-00	ECCENTRIC & PULLEY ASSEMBLY (1)
18	3-77396-00	DRAIN PAN (SINK) (1)
20	3-04584-00	BEARING HOUSING (1)
21	C41-5055-0	BEARING, FAFNIR 1104KL (2)
23	3-77478-00	SHAFT (1)
26	(Specify Voltage)	MOTOR, 220/440 (1)
27	3-77543-00	MOTOR MOUNTING PLATE (1)
30	C33-1439-0	V-BELT, MOTOR TO SPINDLE (1)
31	491-0007-0	ABRASIVE BELT, 4" x 132" (1)
33	3-00105-00	SPRAY NOZZLE HOLDER (1)
34	C22-0355-0	SPRAY NOZZLE (1)
35	C21-7851-0	WATER VALVE (1)
36	C23-3070-0	HOSE, 1/4" ID. x 24" LG. (1)
38	C19-0021-3	SOLENOID VALVE (1)
42	3-55862-00	ECCENTRIC HOUSING (1)
43	3-77477-00	ECCENTRIC (1)
44	3-77544-00	UPPER SHAFT (1)
45	3-00244-00	UPPER PULLEY (1)
46	C41-2790-0	BEARING, FAFNIR 205PP (2)
47	3-05993-00	OPEN COVER CAP (1)
48	3-05993-01	CLOSED COVER CAP (1)
49	C52-2960-1	SNAP RING (1)
51	3-55868-00	ECCENTRIC LOCK HANDLE (1)
52	3-55864-00	ECCENTRIC HANDLE (1)
53	3-00171-00	PULLEY ADJ. KNOB HANDLE (2)
54	3-55867-00	ECCENTRIC LOCK NUT (1)
55	3-81287-00	LOCKING WASHER (1)
56	3-55870-00	ECCENTRIC LOCK DISC (1)
58	3-00243-00	LOWER PULLEY (1)
81	3-78391-00	TIE BRACKET (1)
82	432-0106-2	MOTOR PULLEY (1)
83	432-0122-4	SPINDLE PULLEY (1)
84	262-2030	SAFETY SHIELD (1)
Not Shown	3-78149-00	BELT DRIVE GUARD (1)

NOTE

Refer to the individual pages in the front of this manual for optional components offered on the BM-132 and BM-106G belt machines.



WARRANTY STATEMENT

Sommer & Maca Industries, Inc. (Seller) warrants products of its manufacture to be free from defects in materials and workmanship in normal use for six months from the date of shipment, unless a shorter period is provided elsewhere in this document. Seller's obligation and Buyer's exclusive remedy shall be limited to the repair or replacement, at Seller's option, of defective parts within the warranty period, provided Buyer gives Seller immediate written notice of such alleged defects, and, if requested by Seller, returns the defective parts to Seller's factory prepaid for Seller's inspection.

The warranties contained herein are in lieu of any other warranty, expressed or implied, including any warranty of MERCHANTABILITY OR FITNESS FOR PURPOSE.

In the case of equipment furnished by Seller but not of Seller's manufacture, Seller's liability to Buyer hereunder is limited to such adjustment as the manufacturer thereof makes to Seller. Seller shall in no event be liable for consequential damages.

Warranties hereunder shall not apply to any equipment that shall have been damaged by misuse, neglect, failure to perform maintenance, or accident after the shipment thereof by Seller. In addition thereto, this warranty shall be null and void if the (1) machine is used in a manner contrary to instructions or after malfunction is noticed, (2) Buyer does not honor terms of payment, and (3) machine is modified or altered without the agreement of Seller.

