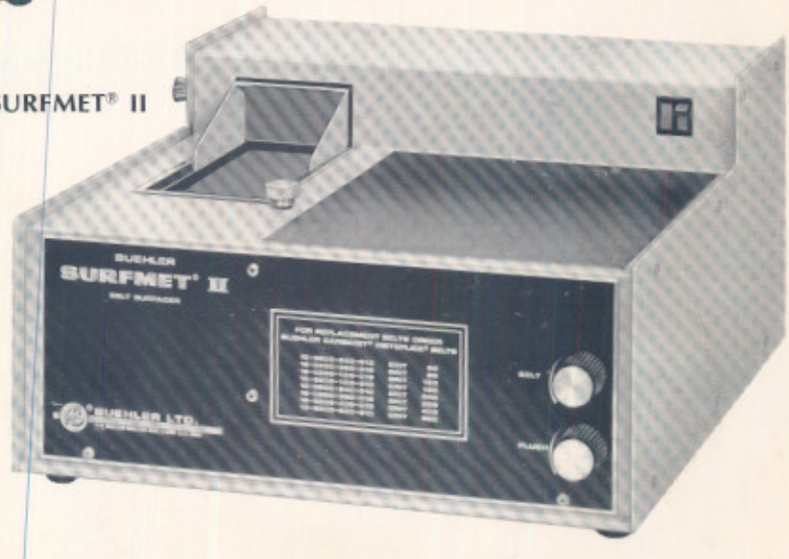
operating and maintenance instructions

16-1270 SURFMET® I

1680 SFPM

16-1280 SURFMET® II



SURFMET® BELT SURFACERS

BUEHLER
APPARATUS FOR MICROSTRUCTURAL ANALYSIS
41 WAUKEGAN ROAD • LAKE BLUFF, ILLINOIS USA 60044

WARRANTY

This unit is guaranteed against defective material and workmanship for a period of one (1) year from date of receipt by customer. Warranty is void if inspection shows evidence of abuse, misuse or unauthorized repair. Warranty covers only replacement of defective materials.

If, for any reason, this unit must be returned to our plant for warranty service, please apply for prior authorization with shipping instructions, and include the following information: Customer Purchase Order Number; Buehler Ltd. Invoice Number and Date; Serial Number; and reason for return.

SURFMET® I & II BELT SURFACERS

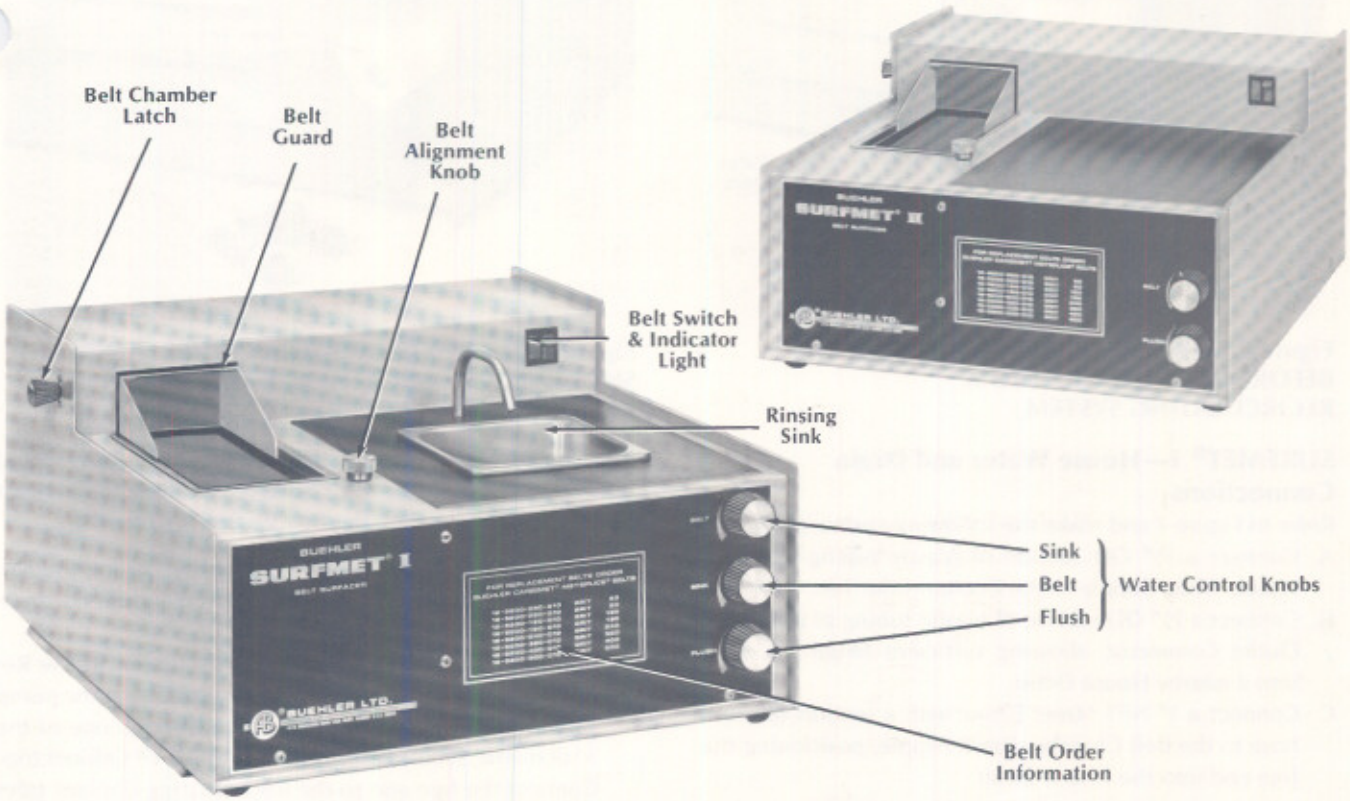


Figure 1. SURFMET® BELT SURFACERS

UNPACKING:

Carefully unpack and check contents. If any components are missing or damaged, save the packing list and material and advise the carrier and Buehler Ltd. of the discrepancy. For your warranty protection and our permanent file, please complete and return the enclosed Equipment Registration Card.

ASSEMBLY:

The No. 16-1270 SURFMET® I and No. 16-1280 SURFMET® II Belt Surfacers are shipped fully assembled for mounting on a BUEHLER No. 16-1298 TECH-MET® Cabinet or your own sturdy laboratory table. The unit should be installed in a location near the required electrical and plumbing services. Included with each unit are samples of No. 16-5200 CARBIMET® and No. 16-5400 ZIRMET™, METSPLICE® Wet or Dry Abrasive Belts, 4" x 36" (10.2cm x 91.4cm). The procedure for installation of Abrasive Belts is described under "Operation".

INSTALLATION:

Electrical service is achieved by connecting the cord to a power source rated at the values indicated on the rear panel specification plate.

Plumbing connections should be made as directed in Figures 2-7 for use of either house water and drain or the 10-1250 Recirculating System.

SURFMET® I Plumbing Installation

The SURFMET® I requires no plumbing changes to the unit itself when connected with House Water and Drain. Operation of the SURFMET® I with a 10-1250 Recirculating System requires the following minor plumbing changes: (Figure 3).

A. Loosen the plastic nuts which secure the Cross-over Tube to the Rinse Water Inlet Tee and the Coolant Inlet Tee and remove the Cross-over Tube.
B. Loosen and remove the plastic nut, plug and internal fittings from the Rinse Water Inlet.
C. Install the plastic nut, plug and fittings (removed in Step "B") to the Cross-over connection of the Rinse Water Inlet.
D. Insert the ⅜" OD Plug and Grab Ring in the Coolant Tee Nut Assembly.

NOTE: Hand tighten all plastic fittings. Do not use a wrench. Save Cross-over Tube for possible reconversion.

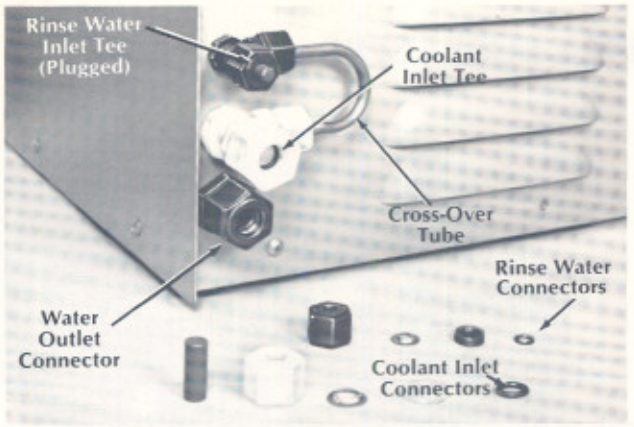


Figure 2. SURFMET® I WATER CONNECTION BEFORE MODIFICATION TO A RECIRCULATING SYSTEM

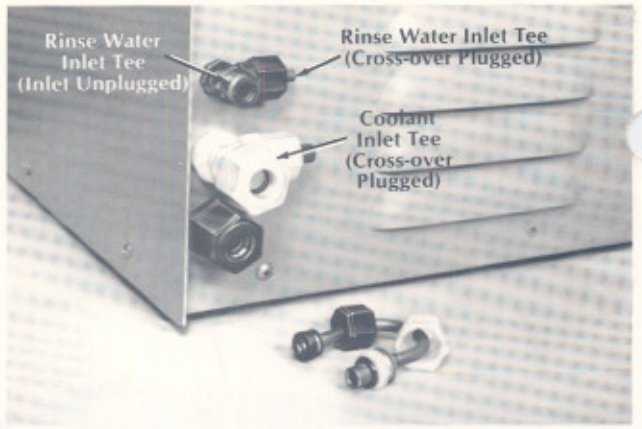


Figure 3. SURFMET® I WATER CONNECTIONS SHOWING MODIFICATIONS FOR A 10-1250 RECIRCULATING SYSTEM

SURFMET® I—House Water and Drain Connections

Refer to Figure 4 and make the following connections:

A. Connect a ½" OD section of plastic tubing from the House Water Supply to the Coolant Inlet Tee.

B. Connect a ½" OD section of plastic tubing to the Water Outlet Connector, allowing sufficient length to drain into a nearby House Drain.

C. Connect a 1" NPT Street Elbow with a section of drain hose to the Belt Chamber Drain Nipple, positioning the free end into the House Drain.

SURFMET® I—Attachment of 10-1250 Recirculating System

Use of the 10-1250 Recirculating System is highly recommended. It allows the use of No. 10-3330 Soluble Oil, a rust inhibiting coolant, which prolongs the life of the unit and prevents the possible collection of grinding residues which could clog the house drain.

The Recirculating System (Figure 10) must be located beneath the SURFMET® Belt Surfacer to allow the coolant to drain by gravity from the Belt Chamber to the Tank.

Connections are madè according to Figure 5 using the No. 16-3170 Hose and Connector Kit (must be ordered separately).

A. Connect a section of ½" OD plastic tubing to the Recirculating System Bulkhead Fitting located on the pump section of the cover. Feed this tube through one of the 3" diameter access holes in the TECH-MET® Cabinet top. Connect the free end to the Recirculating Coolant Inlet Tee on the back panel of the SURFMET® I.

B. Connect a 1" NPT Street Elbow with a section of drain hose to the Belt Chamber Drain Nipple.

C. Insert the other end of the Drain Hose through one of the holes in the lid of the Recirculating Tank.

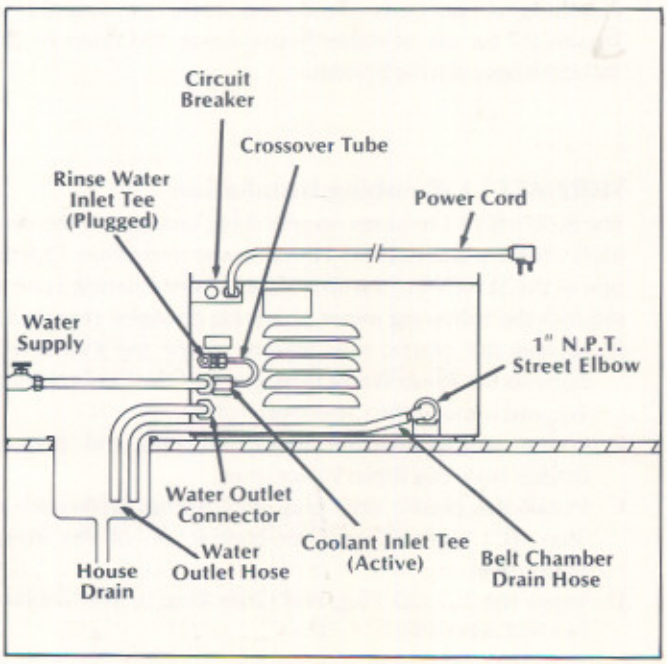


Figure 4. SURFMET® I WITH HOUSE WATER AND DRAIN CONNECTIONS

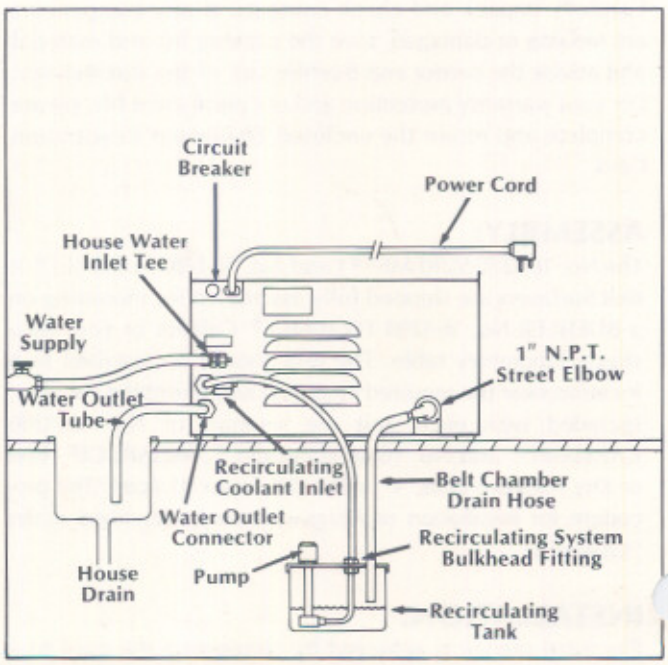


Figure 5. SURFMET® I WITH ATTACHED 10-1250 RECIRCULATING SYSTEM

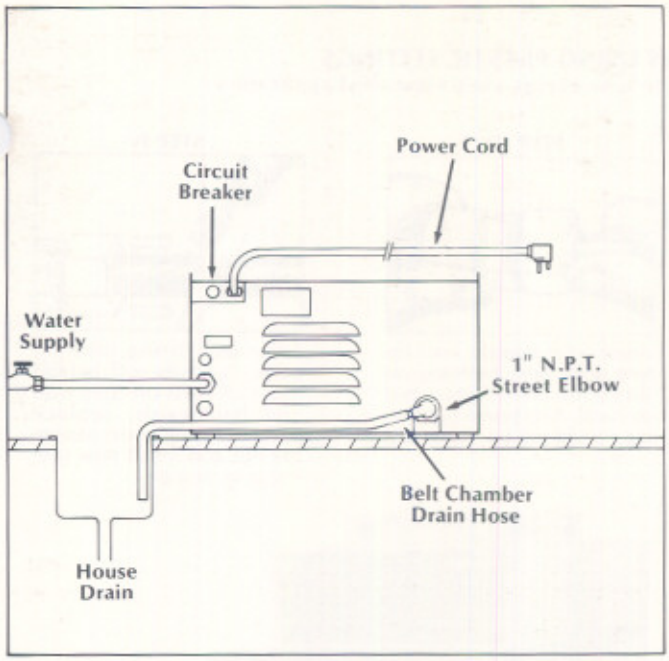


Figure 6. SURFMET® II WITH HOUSE WATER AND DRAIN CONNECTIONS

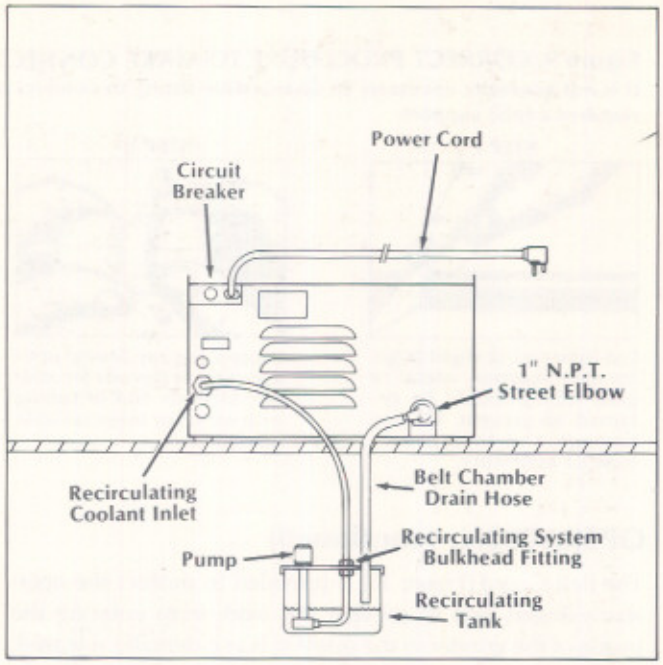


Figure 7. SURFMET® II WITH ATTACHED 10-1250 RECIRCULATING SYSTEM

D. Connect one end of a ¼" OD section of plastic tubing to the House Water Inlet Tee and the other end to the House Water supply.
E. Connect one end of a ½" OD section of plastic tubing to the Water Outlet Connector as a Drain Hose to the House Drain.
F. Lead the Recirculating Pump Power Cord through one of the 3" diameter TECH-MET® Cabinet access holes and connect it with the Accessory Outlet on the rear panel of the SURFMET® I.
G. Fill the Recirculating Coolant Tank with No. 10-3330 Soluble Oil, diluted according to the label instructions.

SURFMET® II Plumbing Installation

No plumbing changes to the SURFMET® II itself are required.

SURFMET® II—House Water and Drain Connections

Refer to Figure 6 and make the following connections:

A. Attach a ½" OD section of plastic tubing from the House Water Supply to the Coolant Inlet Connector.
B. Connect a 1" NPT Street Elbow with a section of Drain Hose to the Belt Chamber Drain Nipple and the House Drain.

SURFMET® II—Attachment of 10-1250 Recirculating System

Please refer to paragraphs under "SURFMET® I—Attachment of 10-1250 Recirculating System" for importance of using this system. Connections are made according to Figure 7 using the No. 16-3170 Hose and Connector Kit (must be ordered separately).

A. Connect a section of ½" OD plastic tubing to the Recirculating System Bulkhead Fitting located on the pump section of the cover. Feed this tube through one of the 2¾" diameter access holes in the TECH-MET® Cabinet top. Connect the free end to the Recirculating Coolant Inlet Connector on the back panel of the SURFMET® II.
B. Connect a 1" NPT Street Elbow with a section of drain hose to the Belt Chamber Drain Nipple.
C. Insert the other end of the drain hose through one of the holes in the lid of the Recirculating Tank.

SURFMET® TECH-MET® Table Combinations

When table space is not available but there is adequate floor space, the TECH-MET® Cabinet installation (16-1298) is recommended. The Recirculating System (10-1250) and the Hose Connector Assembly (16-3170) are packaged separately and must be installed by the customer. A completely assembled unit shown in Figure II.

OPERATION:

General

Care has been taken to make SURFMET® Belt Surfacers safe to operate. The use of eye protection, however, is recommended when operating any grinding device.

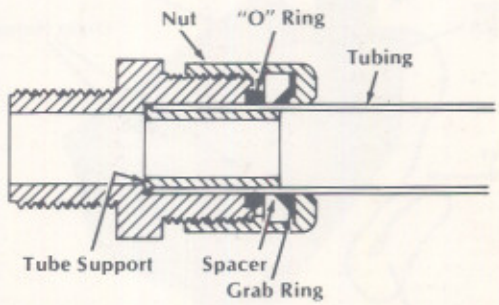
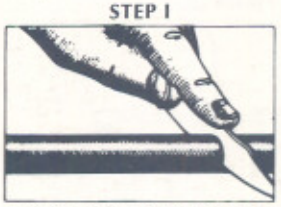


Figure 8. PLASTIC FITTING ASSEMBLY DETAIL

Figure 9. CORRECT PROCEDURE TO MAKE CONNECTIONS USING PLASTIC FITTINGS

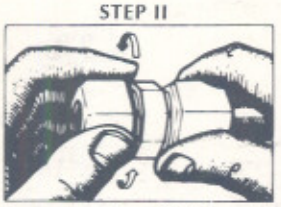
It is not generally necessary to disassemble fitting to connect fitting to tube except when clear vinyl application requires a tube support.

STEP I



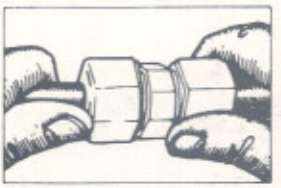
Cut tube end at slight angle for easy insertion. Metal or glass tubing should be deburred to prevent 'O' ring damage and to promote ease of assembly.

STEP II



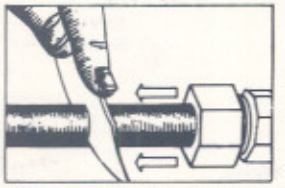
Loosen nut on fitting until about three threads are visible. Moisten end of tubing with water, or other suitable lubricant.

STEP III



Insert tube straight into fitting until tube bottoms on fitting shoulder. Tighten nut by hand. Additional tightening should not be necessary.

STEP IV



To re-use fitting internal parts, cut tube off behind nut, pull parts off tube stub end backwards, replace parts in fitting body, assemble nut and insert new tubing as in step #1.

OPERATION: (continued)

The Belt Guard (Figure 13) is provided to protect the operator's fingers and to prevent the work from entering the inside of the grinder in the event it is accidentally released.

Torn, nicked, frayed, or badly worn abrasive belts should never be used. Such belt defects may catch the edge of the specimen and hurl it against the Guard, possibly causing injury.

Controls

SURFMET® I and II Controls are located on the upper and lower Front Panels (Figure 1) and are noted as follows:

A. Belt Alignment Knob: Turning clockwise causes the belt to shift to the right; turning counterclockwise causes a shift to the left. Adjust as required to center the Belt.
B. Belt Switch and Indicator Light.
C. Sink Water Knob: Controls the flow of water to the sink spout for specimen rinsing. (SURFMET® I).
D. Belt Water Knob: Controls the flow of water to the belt. This should be adjusted to supply just enough water to keep the sample cool and flush the grinding residue away. Turn on after the belt is running.
E. Flush Water Knob: Controls the flow of water to the Belt Chamber flushing system. Turn on before starting the grinder and turn off after grinding has been completed.

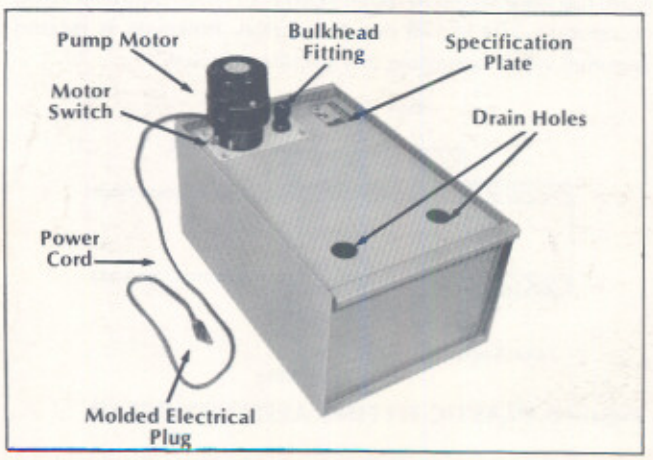
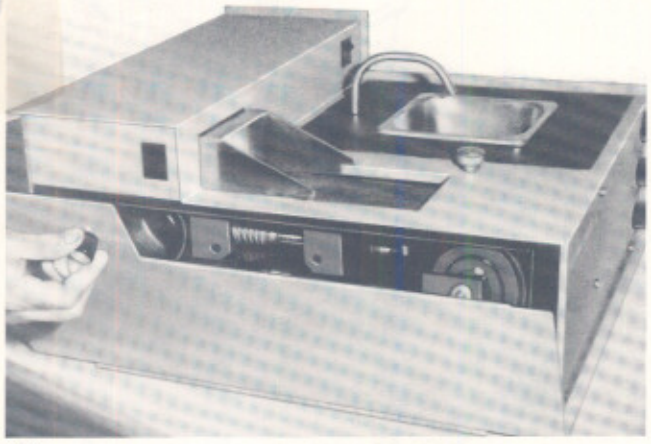


Figure 10 RECIRCULATING SYSTEM

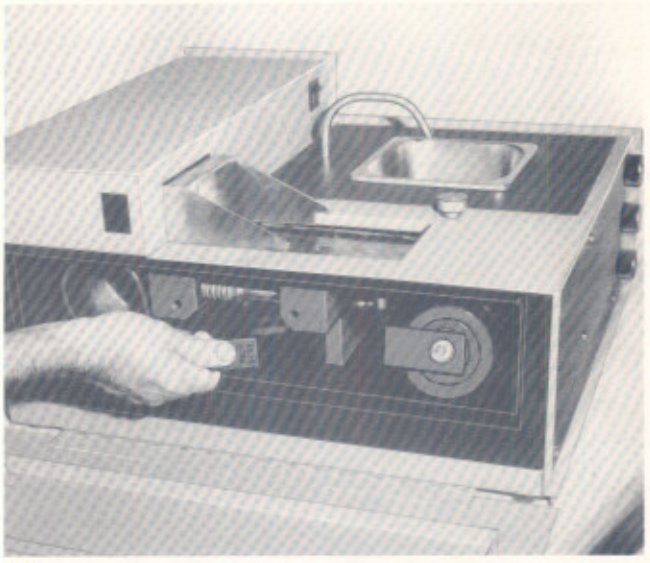
Figure 11. SURFMET® II AND TECH-MET® CABINET INSTALLATION

Installing the Abrasive Belt—Figure 12

A. Open the Belt Chamber door by turning the door release Latch counterclockwise and lowering the hinged door.
B. Release belt tension by pulling the handle forward to stop.
C. Insert the belt.
   1. Position the belt so that the arrow on the inside of the belt lies in the direction of the pulley rotation. (METSPLICE® Belts may be operated in either direction.)
   2. Slide the belt over the Ramped Table, the Drive Pulley and the Idler Pulley so that it is roughly centered.
D. Apply belt tension by pushing belt release handle to the rear.
E. Adjust the belt by turning the motor on momentarily to determine stability of the belt tension. If the belt crawls to the right, turn the alignment knob counterclockwise. If the belt crawls to the left, the alignment knob should be turned clockwise.
F. Close the Belt Chamber door and turn the Latch clockwise to secure.

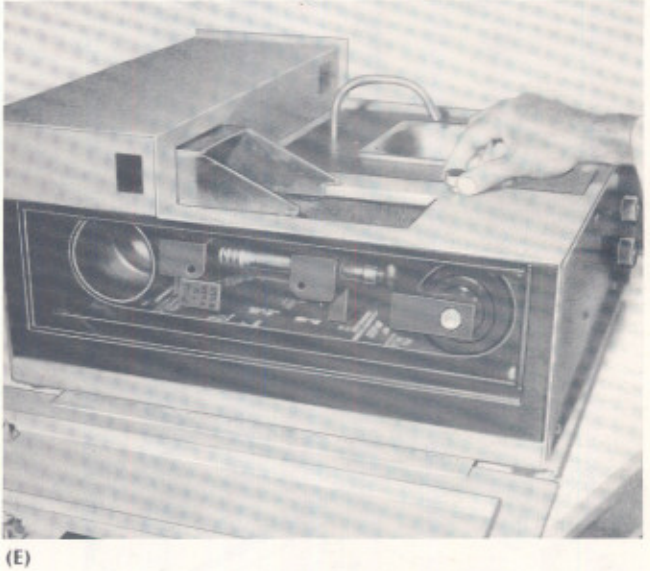


(A)



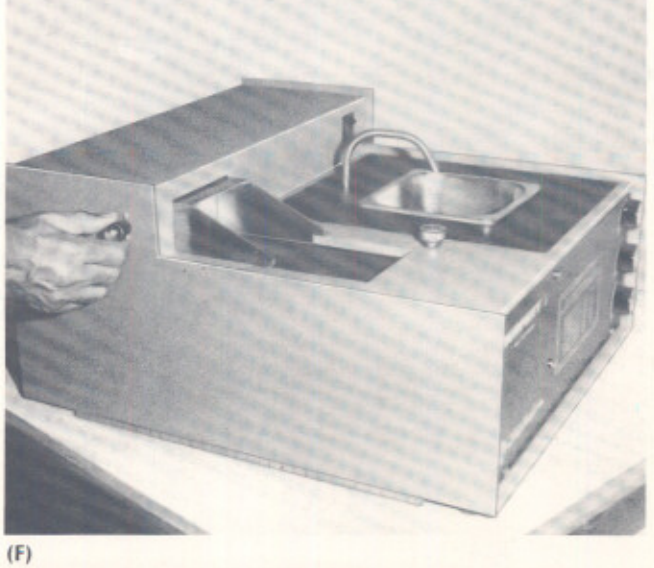
(D)

(B)



(E)

(C)



(F)

Figure 12. BELT INSTALLATION SEQUENCE

(OPERATION INSTRUCTIONS CONTINUED ON PAGE 10)

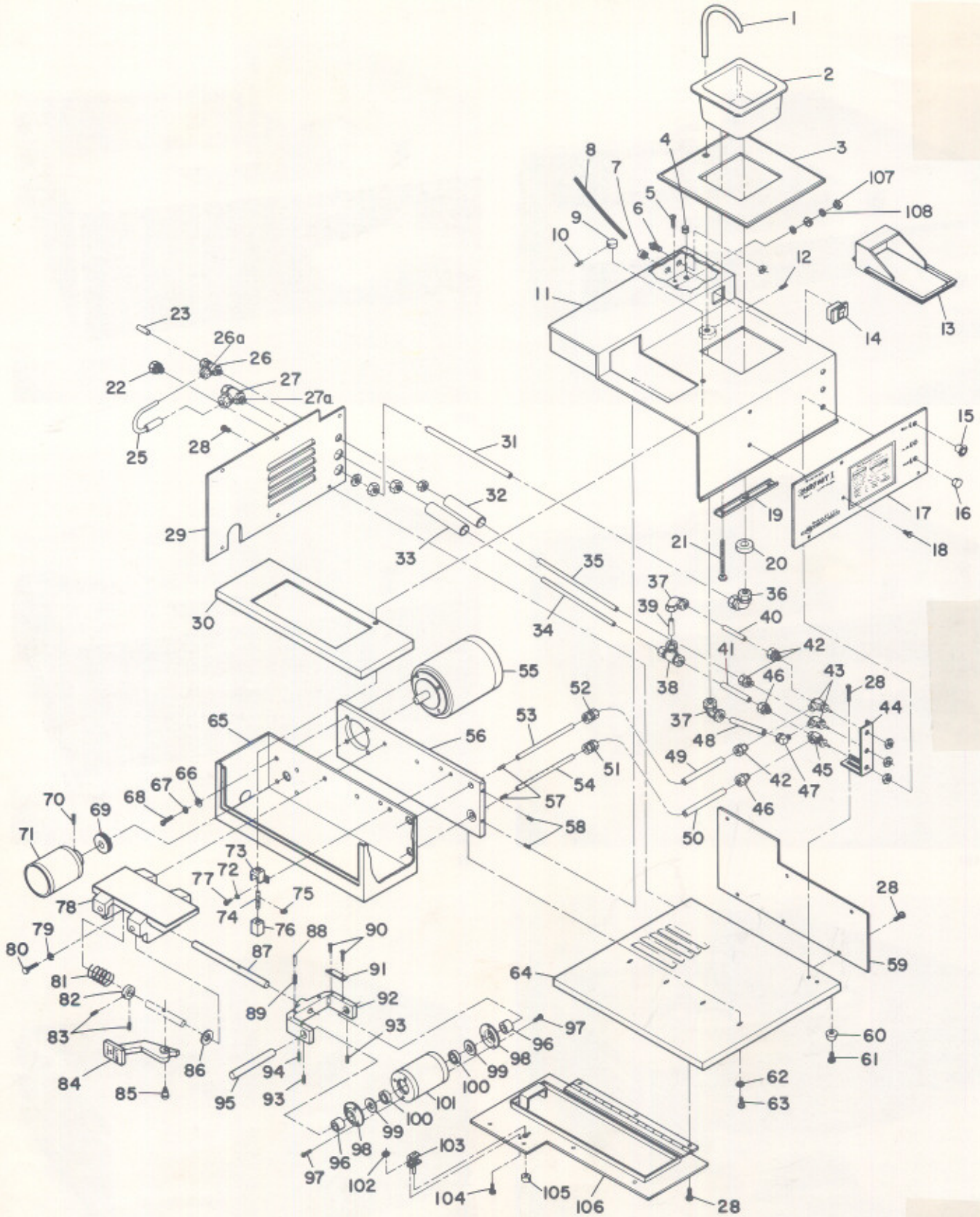


Figure 13. SURFMET® I ASSEMBLY DETAIL

16-1270 SURFMET® I PARTS LIST

(Details of design are subject to change without notice.)

REF. NO.	PART NO.	QTY. REQ.	DESCRIPTION
1	1270-S011	1	Faucet
2	1270-S010	1	Sink
3	1270-S021	1	Table top with sink
4	R-4536	1	Cord Bushing
5	R-7605	1	Screw 8-32x⅜" Type "T" SS
6	R-7274	1	Circuit Breaker 115 V, 60 Hz.
	R-7275	1	Circuit Breaker 230 V, 50 Hz.
7	R-4536	1	Cord Bushing 115 V, 60 Hz.
	R-4535	1	Cord Bushing 230 V, 50 Hz.
8	1270-S037	1	Cord 115 V, 60 Hz.
	1270-S038	1	Cord 230 V, 50 Hz.
9	1270-S017	1	Belt Adjusting Knob
10	R-1173	1	Set Screw 8-32x¼"
11	1270-S001	1	SURFMET® I Cabinet
12	R-0693	1	Screw 8-32x½" Skt. Hd.
13	1270-S009	1	Splash Guard
14	R-7590	1	Switch Lamp 1600S021
15	R-2715	1	Grommet
16	1330-S71	3	Knob
17	1270-S032	1	Nameplate
18	R-1663PPH	2	Screw 10-32x¼" Cr Pan Hd. SS
19	1270-S052	1	Sink Retainer
20	R-4560	1	Shaft Collar
21	R-2263	2	Screw ¼-20x3" Hex Hd.
22	R-4516	1	Bulkhead Union ½"
23	1270-S096	1	Plug
24			NOT USED
25	1270-S111	1	Tube Crossover
26	R-7344	1	Tubing Tee ¼"
26a	R-0615WS	1	Washer ¼"
27	R-7205	1	Tubing Tee ½x⅜x½"
27a	R-7623	1	Washer ½"
28	R-7605	20	Screw 8-32x⅜" Type "T" SS
29	1270-S008	1	Back Panel
30	1270-S004	1	Water Chamber Cover
31	1270-S045	1	Drain Tube
32	1270-S015	1	Plastic Tubing 1" O.D.x9"
33	1270-S125	1	Plastic Tubing 1¼" O.D.x8.5"
NS†	1270-S048	1	Bracket & Valve Assembly (Incl. Items 34, 35, & 37-50)
34	1270-S122	1	Plastic Tubing 1½" O.D.x13"
35	1270-S044	1	Plastic Tubing ¼" O.D.x17"
36	R-4548	1	Elbow Union
37	R-4515	2	Elbow Union
38	R-7205	1	Union Tee
39	1270-S123	1	Plastic Tubing ⅜" O.D.x3.1"
40	1270-S124	1	Plastic Tubing ¼" O.D.x3.4"
41	1270-S121	1	Plastic Tubing ½" O.D.x3.1"
42	R-4512	3	Male Connector
43	1600-S044	2	Valve ⅛"
44	1270-S013	1	Water Valve Bracket
45	1270-S079	1	Valve ¼"
46	R-7223	2	Male Connector ½" Tube x ¼" NPT
47	R-4510	1	Male Elbow Fitting
48	1270-S046	1	Plastic Tubing ¼" O.D.x10.5"
49	1270-S101	1	Plastic Tubing ¼" O.D.x6.5"
50	1270-S100	1	Plastic Tubing ½" O.D.x7.1"
51	R-7224	1	Tubing Reducer ½x⅜"
52	R-4514	1	Union Connector
53	1270-S087	1	Belt Water Tube
54	1270-S088	1	Flushing Tube
55	1270-S054	1	Motor 115 V, 60 Hz.
	1270-S055	1	Motor 230 V, 50 Hz.
56	1270-S062	1	Motor Mounting Plate
57	R-1305	2	Set Screw ¼-20x⅜"
58	R-1183	2	Set Screw 10-32x¼"
59	1270-S006	1	Door Panel
60	R-2702	4	Foot
61	R-7634	4	Screw 10-32x¾" Type "T" SS
62	R-0614LW	4	Lockwasher ¼"
63	R-0733	4	Screw ¼-20x½" Skt. Hd.
64	1270-S007	1	Base
65	1270-S002	1	Water Chamber
66	R-0615WL	8	Washer ¼"
67	R-0615LW	4	Lockwasher ¼"
68	R-0987	4	Screw ¼-20x1" Skt. Hd. SS
69	R-4519	1	Seal
70	R-1205	2	Set Screw 5/16-18x⅜"
71	1270-S056	1	Drive Pulley
72	R-0612LW	2	Lockwasher #10 SS
73	1270-S014	1	Belt Adjusting Bracket
74	1270-S018	1	Belt Adjusting Shaft
75	R-4520	1	Klip Ring
76	1270-S019	1	Belt Adjusting Block
77	R-1666	2	Screw 10-32x½" Slt. Rd. Hd. SS
NS†	1270-S034	1	SURFMET® Table Assy. Complete (Incl. Items 78, 81-96 & 1255-AB3
78	1270-S134	1	Table & Wear Plate
79	R-0621LW	2	Lockwasher ⅜"
80	R-1029	2	Screw ⅜-16x1¼" Skt. Hd.
81	1255-S11	1	Tension Spring
82	1255-S12	1	Stop Collar
83	R-1283	2	Set Screw 8-32x¼"
84	1270-S031	1	Belt Release Lever
85	R-4522	1	Shoulder Screw
86	R-4523	1	Washer
87	1270-S028	1	Shaft-Idler Pulley Yoke
88	1255-S8A	1	Spring Guide
89	1255-S8	1	Alignment Spring
90	R-2851	2	Drive Screw
91	1255-S7A1	1	Yoke Pad
92	1255-S7A	1	Idler Pulley Yoke
93	R-1193	2	Set Screw ¼-20x¼"
94	R-1204	2	Set Screw 5/16-18x5/16"
95	1255-S7B	1	Shaft-Idler Pulley
96	1255-S7D	2	Shaft Bushing
97	R-1622	6	Screw 6-32x3/16" Slt. Rd. Hd. SS
98	1255-S7F	2	Bearing Cover
99	1255-S7E	2	Seal
100	1251-S19B	2	Driven Pulley, Brg.— NO DRAW
101	1251-S19A	1	Driven Pulley
NS†	1255-AB3	1	Driven Pulley Assy. (Incl. Items 97-101)
102	R-0603	2	Nut 4-40 SS
103	R-4525	1	Latch
104	R-7271	2	Screw 4-40x¼ Cr. Truss Hd.
105	R-2966	1	Knob & Set Screw
106	1270-S005	1	Door-Hinged
107	R-0608	2	Nut 8-32 Hex
108	R-0609LWE	2	Lockwasher #8
NS†	1270-S131	1	Recirc. Sys. Access. Kit

†Not shown

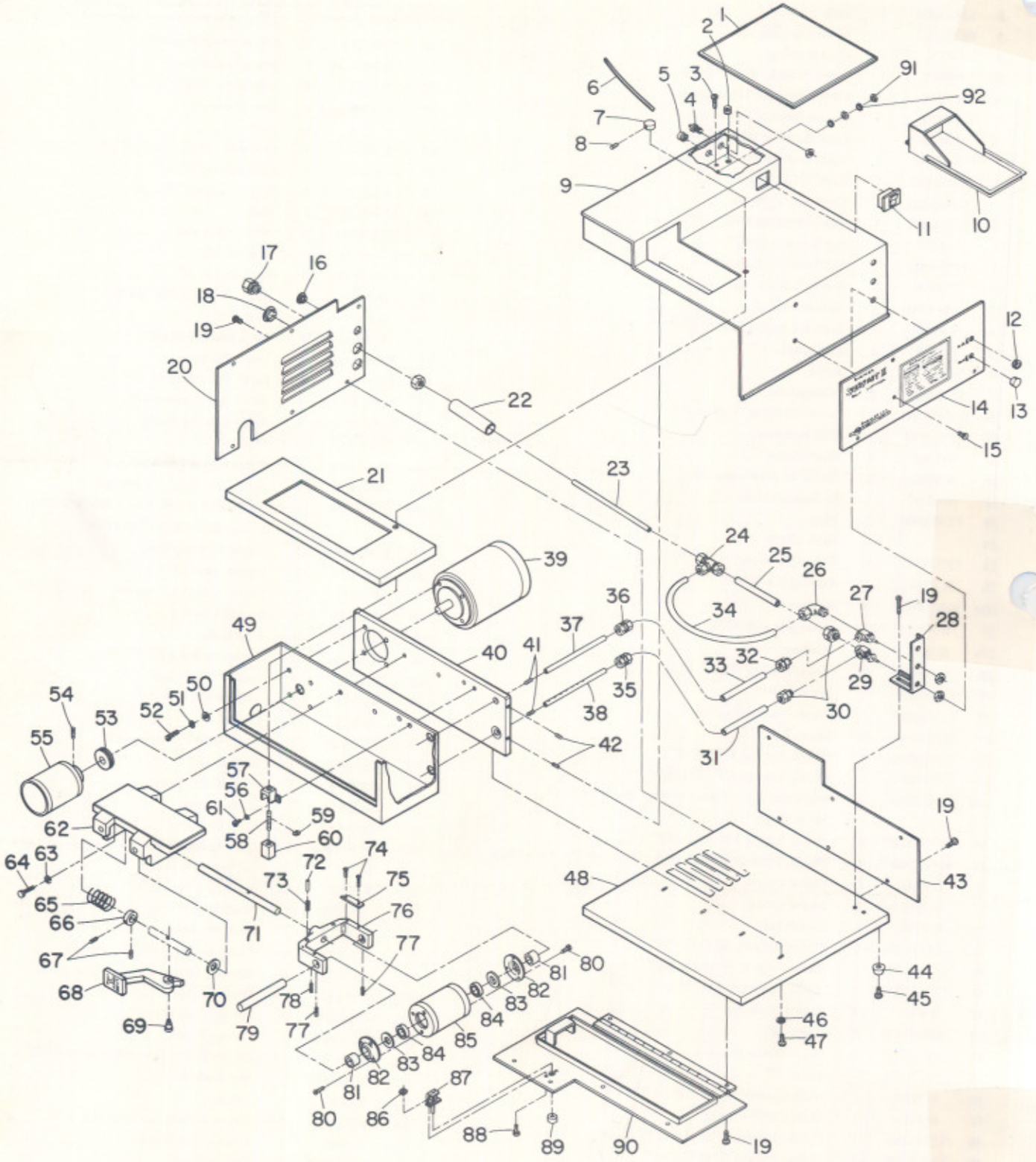


Figure 14. SURFMET® II ASSEMBLY DETAIL

16-1280 SURFMET® II PARTS LIST

(Details of design are subject to change without notice.)

REF. NO.	PART NO.	QTY. REQ.	DESCRIPTION
1	1270-S023	1	Table Top
2	R-4536	1	Cord Bushing
3	R-1643	1	Screw 8-32x¼"
4	R-~~2274~~	1	Circuit Breaker 115 V, 60 Hz. R8190
	~~R-2275~~	1	Circuit Breaker 230 V, 50 Hz. R8191
5	R-4536	1	Cord Bushing 115 V, 60 Hz.
	R-4535	1	Cord Bushing 230 V, 50 Hz.
6	1270-S037	1	Cord 115 V, 60 Hz.
	1270-S038	1	Cord 230 V, 50 Hz.
7	1270-S017	1	Belt Adjusting Knob
8	R-1173	1	Set Screw 8-32x¼"
9	1270-S025	1	SURFMET® II Cabinet
10	1270-S009	1	Splash Guard
11	R-7590	1	Switch Lamp 1600S021
12	R-2715	1	Grommet
13	1330-S71	2	Knob
14	1270-S033	1	Nameplate
15	~~R-1661PPH~~	2	Screw 10-32x¼" Cr. Pan Hd. SS 1270S161
16	R-4537	1	Hole Plug
17	R-4516	1	Bulkhead Union ½"
18	R-2774	1	Hole Plug
19	R-7605	20	Screw 8-32x⅜"
20	1270-S008	1	Back Panel
21	1270-S004	1	Water Chamber Cover
22	1270-S125	1	Plastic Tubing 1¼" O.D. x 8.5"
23	1270-S122	1	Plastic Tubing ½" O.D.x13"
24	R-7205	1	Tubing Tee ½x⅜x½"
25	1270-S121	1	Plastic Tubing ½" O.D. x 3.1"
26	R-7227	1	Elbow ⅜" Tube x ⅜" NPT
27	1600-S044	1	Valve ⅛"
28	1270-S013	1	Water Valve Bracket
29	1270-S079	1	Valve ¼"
30	R-7223	2	Male Connector ½" Tube x ¼" NPT
31	1270-S100	1	Plastic Tubing ½" O.D.x7.1"
32	R-4512	1	Male Connector
33	1270-S126	1	Plastic Tubing ¼" O.D. x 6.9"
34	1270-S128	1	Plastic Tubing ⅜" O.D. x 19"
35	R-7224	1	Tubing Reducer ½x⅜"
36	R-4514	1	Union Connector
37	1270-S087	1	Belt Water Tube
38	1270-S088	1	Flushing Tube
39	~~1270-S085~~	1	Motor 115 V, 60 Hz. 1270 $155
	~~1270-S085~~	1	Motor 230 V, 50 Hz. BOTH VOLTAGES
40	1270-S062	1	Motor Mounting Plate
41	R-1305	2	Set Screw ¼-20x⅜"
42	R-1183	2	Set Screw 10-32x¼"
43	1270-S006	1	Door Panel
44	R-2702	4	Foot
45	R-7634	4	Screw 10-32x¼" Type "T" SS
46	R-0614LW	4	Lockwasher ¼"
47	R-0733	4	Screw ¼-20x½" Skt. Hd.
48	1270-S007	1	Base
49	1270-S002	1	Water Chamber
50	R-0615WL	8	Washer ¼"
51	R-0615LW	4	Lockwasher ¼"
52	R-0987	4	Screw ¼-20x1" Skt. Hd. SS
53	R-4519	1	Seal
54	R-1205	2	Set Screw 5/16-18x⅜"
55	1270-S056	1	Drive Pulley
56	R-0612LW	2	Lockwasher #10 SS
57	1270-S014	1	Belt Adjusting Bracket
58	1270-S018	1	Belt Adjusting Shaft
59	R-4520	1	Klip Ring
60	1270-S019	1	Belt Adjusting Block
61	R-1666	2	Screw 10-32x½" Slt. Rd. Hd. SS
62	1270- S134	1	Table & Wear Plate
63	R-0621LW	2	Lockwasher ⅜"
64	R-1029	2	Screw ⅜-16x1¼" Skt. Hd.
NS†	1270-S034	1	Table Assembly Complete (Incl. Items 62, 65-79, 81 & 1255-AB3)
65	1255-S11	1	Tension Spring
66	1255-S12	1	Stop Collar
67	R-1283	2	Set Screw 8-32x¼"
68	1270-S031	1	Belt Release Lever
69	R-4522	1	Shoulder Screw
70	R-4523	1	Washer
71	1270-S028	1	Shaft-Idler Pulley Yoke
72	1255-S8A	1	Spring Guide
73	1255-S8	1	Alignment Spring
74	R-2851	2	Drive Screw
75	1255-S7A1	1	Yoke Pad
76	1255-S7A	1	Idler Pulley Yoke
77	R-1193	2	Set Screw ¼-20x¼"
78	R-1204	2	Set Screw 5/16-18x5/16"
79	1255-S7B	1	Shaft-Idler Pulley
80	R-1622	6	Screw 6-32x3/16" Slt. Rd. Hd. SS
81	1255-S7D	2	Shaft Bushing
82	1255-S7F	2	Bearing Cover
83	1255-S7E	2	Seal
84	~~1251-S19B~~	2	Drive Pulley, Brg. 1625$011
85	1251-S19A	1	Driven Pulley
NS†	1255-AB3	1	Driven Pulley Assembly (Incl. Items 80 & 82-85)
86	R-0603	2	Nut 4-40
87	R-4525	1	Latch
88	R-7271	2	Screw 4-40x¼" Cr. Truss Hd.
89	R-2966	1	Knob & Set Screw
90	1270-S005	1	Door-Hinged
91	R-0608	2	Nut 8-32 Hex
92	R-0609LWE	2	Lockwasher #8

†Not Shown

OPERATION: (continued)

Simplified Operating Procedure

- Turn on Flush water.
- Turn on Belt Switch.
- Adjust belt alignment, if required.
- Turn on Belt water. When grinding is completed, reverse this sequence.

Technique

The operator (right handed) should stand in front of and slightly to the left of the belt station to be used so that his arm is in line with the long axis of the belt. Left handed operators will find it more comfortable to stand slightly to the right of the belt center.

The Belt water knob should be adjusted to provide a light film on the moving belt surface. Too little coolant will cause the specimen to heat; too much coolant will reduce the cutting rate because the specimen will ride on a film of water.

The specimen should be grasped firmly between the fingers and moved from side to side across the width of the belt to obtain the highest belt life.

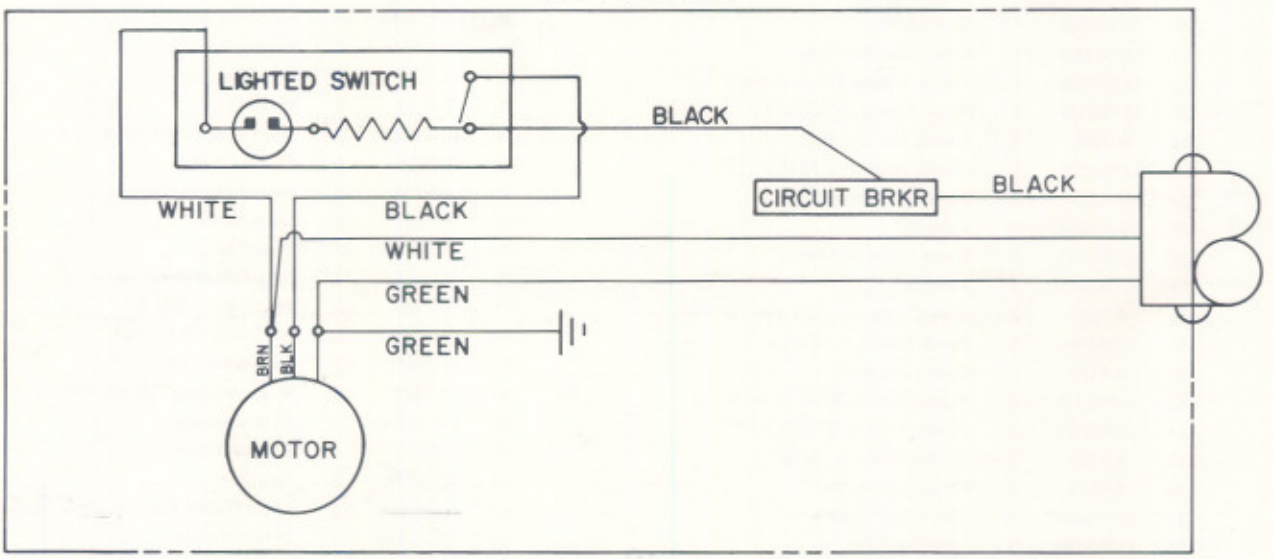
Use the Sink water to flush away residues before inspection of the specimen. Additional grinding may be required or it may be possible to move to the next step.

MAINTENANCE:

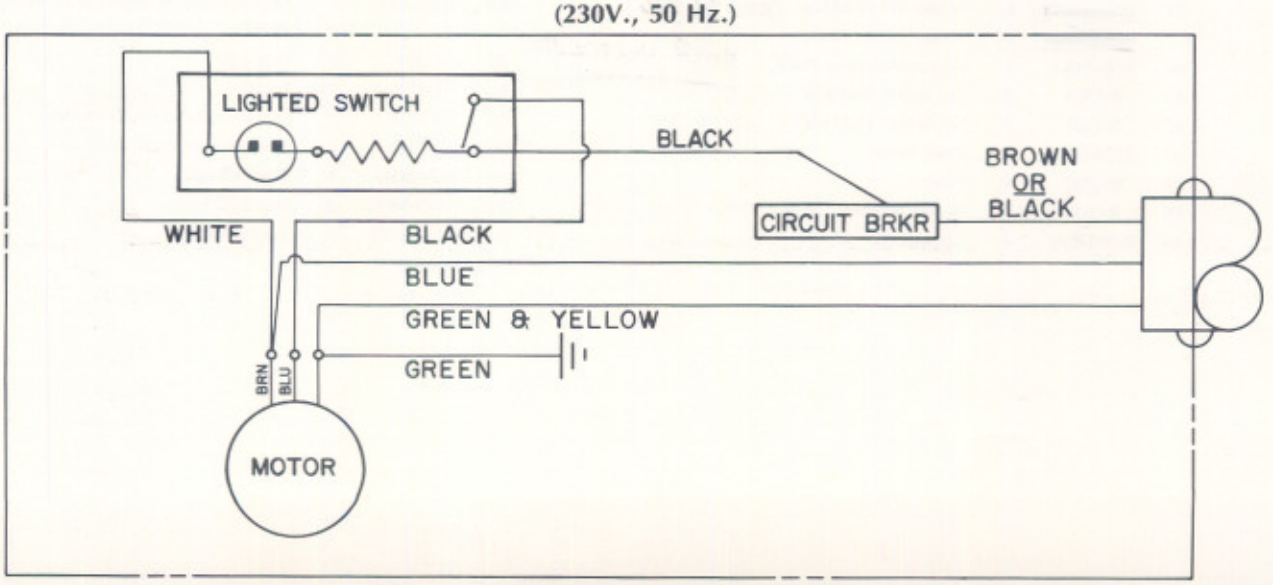
Permanently sealed bearings are used and lubrication is unnecessary. The unit should be kept clean to assure proper operation. If correctly used, the belt chamber flushing system will keep particulate matter from accumulating in this area. The Belt Guard may be easily removed for cleaning. To remove, slide it forward and lift up. Clean with soap and water and a plastic scouring pad. The Belt Guard may be reinstalled by slipping it into the cabinet opening so that the lips on the flat face of the Guard will rest on the cabinet, *not the belt surface*. Check to see if there is a gap between the Guard and the belt surface.

SURFMET® I & II ELECTRICAL SCHEMATICS

(115V., 60 Hz.)



(230V., 50 Hz.)



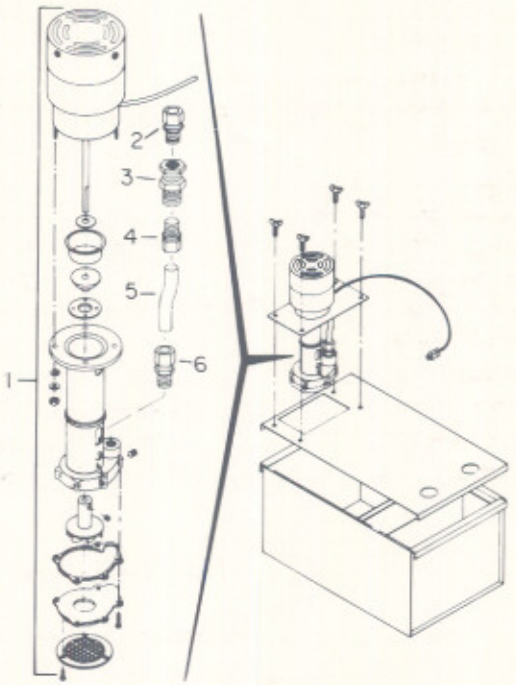
10-1250 RECIRCULATING COOLING SYSTEM

OPERATION AND MAINTENANCE:

Fill the Tank with eight (8) gallons of water. The addition of 16 ounces of No. 10-3330 Soluble Oil will provide rust inhibiting protection to both the machine and the Tank. Activate the Recirculating Cooling System from the power cord and pump switches and the machine accessory switch (if any) prior to starting the machine.

Pump bearings are permanently sealed and require no lubrication. The Tank should be emptied and thoroughly cleaned as required. Refill with fresh water and 10-3330 Soluble Oil.

RECIRCULATING SYSTEM ASSEMBLY DETAIL



RECIRCULATING SYSTEM PARTS LIST

REF. NO.	PART NO.	QTY. REQ.	DESCRIPTION
1	1250-S012	1	Pump Assy. 115 V. (incl. items 2-6)
	1250-S013	1	Pump Assy. 220 V. (incl. items 2-6)
2		1	Male Conn. 1/2" Tube to 1/2" Pipe
3		1	Anchor Connector
4		1	Male Conn. 5/8" Tube to 1/2" Pipe
5		4.5"	Plastic Tube 5/8" O.D.
6		1	Male Conn. 5/8" Tube to 3/8" Pipe

SUPPLIES FOR SURFMET® 1 & 11 BELT SURFACERS

ABRASIVE BELTS

Grit	Aluminum Oxide 4" x 36" (10.2cm x 91.4cm) Dry Use Only	Silicon Carbide CARBIMET® METSPLICE® 4" x 36" (10.2cm x 91.4cm) Wet or Dry Use	Zirconia Alumina ZIRMET™ METSPLICE® 4" x 36" (10.2cm x 91.4cm) Wet or Dry Use
50	16-5000-050-010	16-5200-050-010	
60			16-5400-060-005
80	16-5000-080-010	16-5200-080-010	
120	16-5000-120-010	16-5200-120-010	16-5400-120-005
150	16-5000-150-010		
180	16-5000-180-010	16-5200-180-010	16-5400-180-005
220			16-5400-220-005
240	16-5000-240-010	16-5200-240-010	
320	16-5000-320-010	16-5200-320-010	
400		16-5200-400-010	
600		16-5200-600-010	
	(Package 10 Belts per Box)		(Package 5 Belts per Box)

SOLUBLE OIL

Quart (0.95/)	Gallon (3.8/)
10-3330-032	10-3330-128

16-3170 HOSE AND CONNECTOR ASSEMBLY PARTS LIST

PART NO.	QTY. REQ.	DESCRIPTION
1270-S015	1	Plastic Tube
1270-S057	1	Drawing
R-0231	1	Street Elbow 1" 90°
R-0378	1	Reducing Bushing
R-2819	1	Male Connector
R-2881	126"	Tubing 1/2" O.D.
R-2886	66"	Tubing 1/4" O.D.
R-4511	1	Bulkhead Union
R-4512	2	Male Connector
10-3055	1	Drain Hose