BUEHLER

Operation and Maintenance Instructions

BUEHLER® HANDIMET® 2 ROLL GRINDER

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Operation and Maintenance Instructions

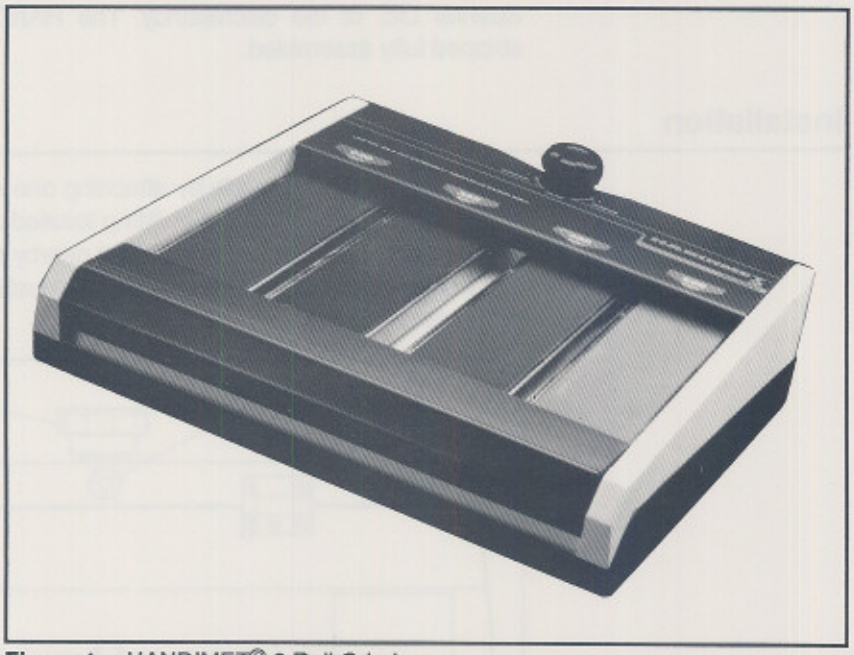

Figure 1. HANDIMET® 2 Roll Grinder

BUEHLER® HANDIMET® 2 Roll Grinder

The BUEHLER® HANDIMET® 2 Roll Grinder is a compact, self-contained four stage fine grinding station that accommodates a variety of sample preparation applications. It has four forward pitched 3-7/16" x 11-1/2" (9cm x 22cm) dent resistance PVC grinding surfaces, molded RIM housing with stainless steel roll cover roll cover and cut off bar, water activated abrasive paper hold-downs, abrasive roll braking device, stainless steel ball valve for water control, four sets of water jets, and water discharge drain. Includes samples of No. 30-5143 CARBIMET® Paper Rolls, Grits 240, 320, 400 and 600 and operating instructions.

Warranty

This unit is guaranteed against defective material and workmanship for a period of two (2) years 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.

Unpacking and Assembly

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. The HANDIMET® 2 Roll Grinder is shipped fully assembled.

Installation

Drain connection is made by attaching one end of the supplied 5/8" ID plastic hose to the drain outlet fitting located at the rear of the unit. The remaining free end should extend to a nearby sink or other available drain or catch container. See Figure 2. The unit must be placed on a level surface for proper drainage.

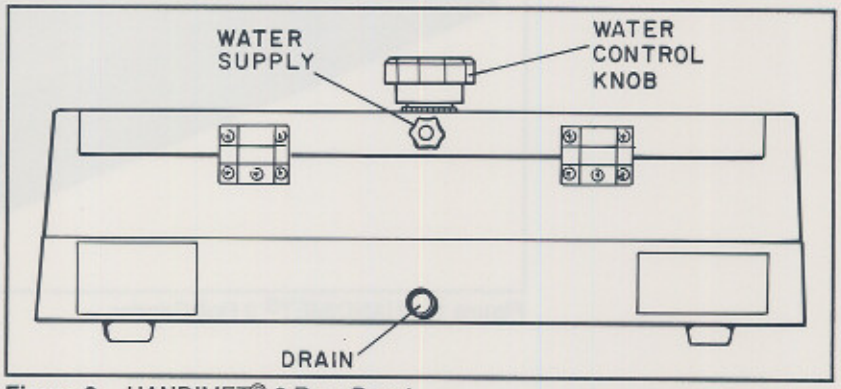

Figure 2. HANDIMET® 2 Rear Panel

Water connection is supplied to the unit by connecting one end of the supplied 1/4″ (6.4 cm) O.D. plastic tube to the water outlet fitting located at the rear of the unit. Figure 3 shows the plastic fitting assembly details and shows the correct procedure for making connections. The other end should be connected to a water source equipped with a separate shut-off valve. When not used for prolonged periods, or when not attended, the water supply to the unit should be turned off at this valve to avoid possible water pressure leakage at the hose connections. The recommended water pressure is 40 to 100 PSI.

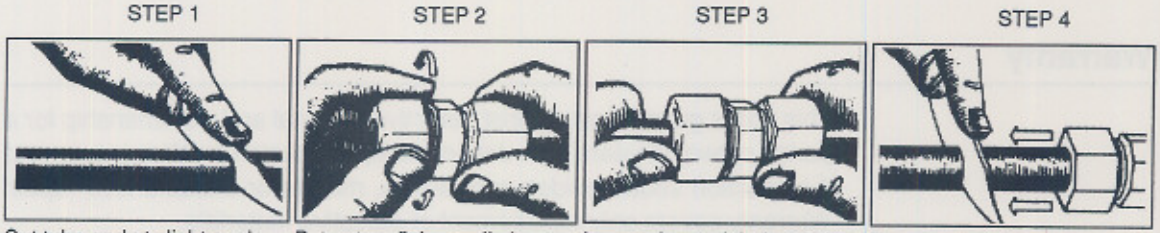

Figure 3. Plastic Water Fitting Assembly

Operation

Loading CARBIMET® Paper Rolls

Each of the four different grit size rolls should be installed in the appropriate position indicated on the cover data panel (Figure 4). Install the roll as follows:

1. Turn off the water and raise the cover data panel.
2. Remove the protective cover from the paper roll.
3. Insert axle through paper roll and lower into position.
4. Thread the end of the paper over bar and between the platen paper edge guides.
5. Slide the paper forward through the platen, using the heel of the hand until it protrudes through the front panel. The paper will automatically be clamped into position when the water is turned on.

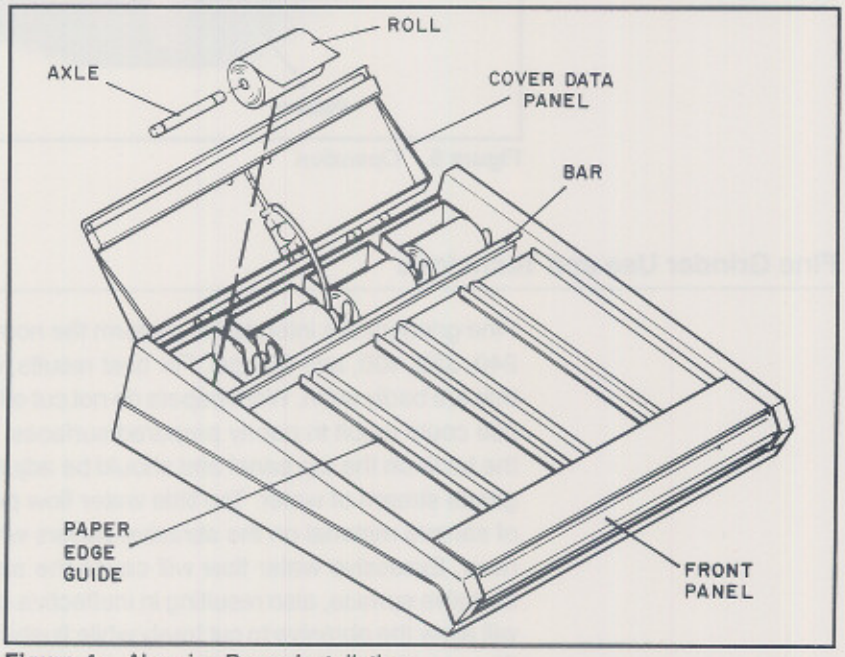

Figure 4. Abrasive Paper Installation

Advancing Paper

To advance the paper, the water control must be off. Use the palm of the hand to advance the paper through the trim strip at the front of the unit. Tear off the worn paper. When the water is turned on, the paper will automatically be clamped in place again.

Water Flow

The water control knob controls the flow of water across the platen. It also controls the flow of water through the patented water bag clamping mechanism which holds the abrasive paper during grinding.

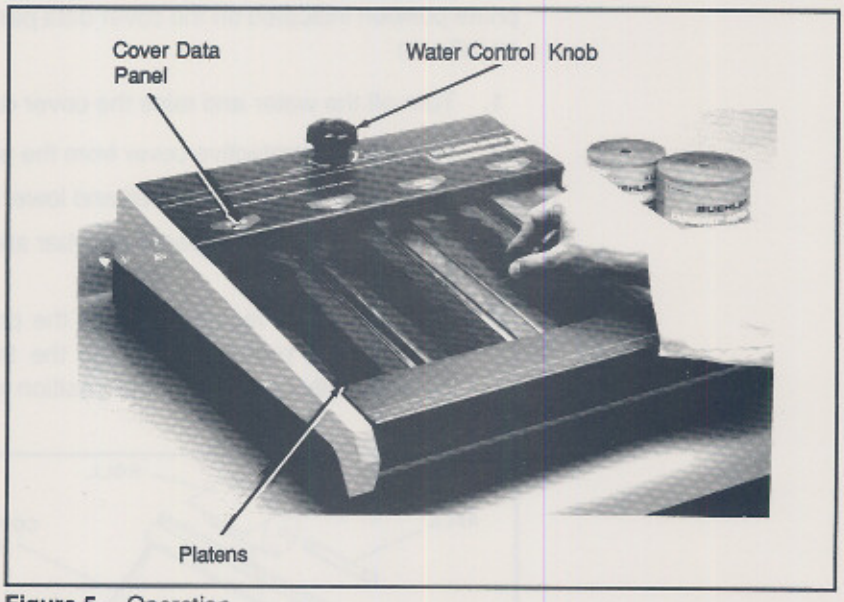

Figure 5. Operation

Fine Grinder Use and Technique

Fine grinders are intended to perform the normal fine grinding sequence, 240, 320, 400, and 600 grit. For best results, do not use abrasive papers that are badly worn. Worn papers do not cut effectively and their continued use could result in poorly prepared surfaces. Water flow is controlled by the knob on the top panel and should be adjusted to provide a steady but gentle stream of water. Too little water flow produces excessive build-up of sample material on the abrasive papers which reduces their effectiveness. Excessive water flow will cause the sample to hydroplane on the abrasive surface, also resulting in ineffective cutting. The correct flow rate will allow the abrasive to cut freely while flushing the waste products away. Fine grinding technique varies with the individual operator, but the following suggestions should be particularly helpful to the less experienced.

- Grasp the sample firmly in the finger tips.
- Apply a uniform but form pressure to the specimen against the abrasive surface.
- Draw the specimen over the abrasive surface, from back to front in a straight, even motion. A back and forth motion usually leads to an undesirable curved surface.

- Perform as many strokes as required to remove all visible scratches, then continue on several additional strokes to be certain that the previous scratches have been removed.
- Fine grinding should proceed from the coarsest (240) grit to the finest (600) grit.
- Rotate the specimen 90° between each step so that grinding is perpendicular to the previous scratches. This will give a clear indication of how grinding is progressing.
- Rinse the sample between each step to remove abrasive particles. Clean (ultrasonically) thoroughly after the last (600 grit) step.
- Change paper when it becomes worn or when switching to different material types, ie. steel to aluminum, etc..

Maintenance

This unit features corrosion resistance, reaction-injection-molded work and exterior surfaces. For years of trouble free service, exposed surfaces should be wiped clean with a damp cloth after each use or at the end of the day. This will reduce the possibility of coarse grit abrasive particles contaminating the finer areas. Refer to the exploded view and parts list for part identification and disassembly order.

Supplies

Abrasive rolls

Specify BUEHLER® CARBIMET® Paper Rolls for use on your BUEHLER® HANDIMET® 2 Roll Grinder.

CARBIMET® Paper Rolls

Grit	3-7/16" x 60' (8.87cm x 23m).
240	30-5143-240-001
320	30-5143-320-001
400	30-5143-400-001
600	30-5143-600-001

Packed 1 Roll per Package

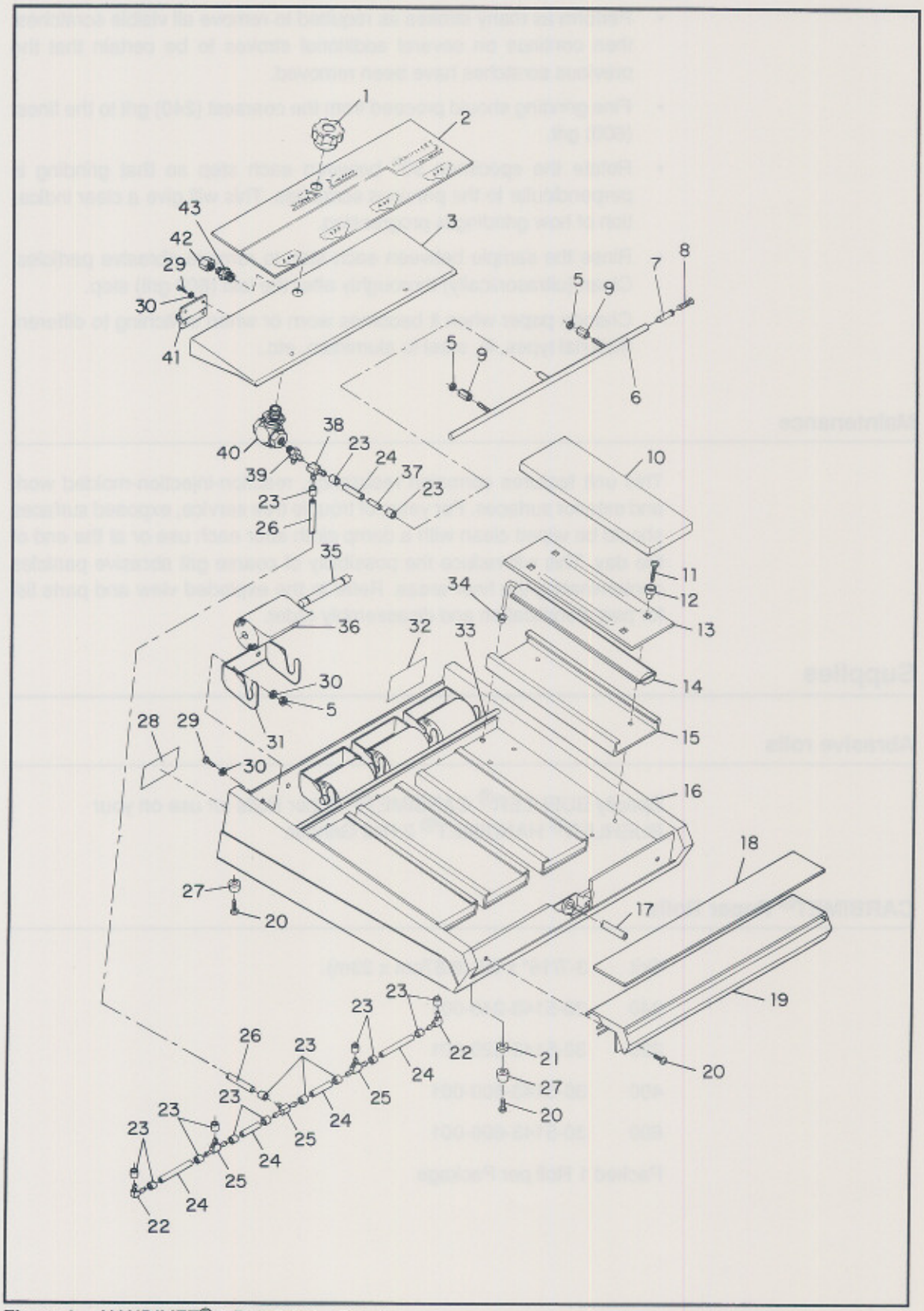

Figure 6. HANDIMET® 2 Roll Grinder Detail

HANDIMET® 2 Roll Grinder Parts List

ITEM NO.	PART NO.	QTY. REQ'D	DESCRIPTION
1	1572S026	1	Knob, Water Valve
2	1572S029	1	Nameplate, Upper
3	1572S043	1	Cover, Rear
5	R8624	14	Nut, 8-32
6	1572S025	1	Tube, Water
7	1472S06400	2	Plug
8	R1826	2	Screw, 6-32 x 1/2" slt ft hd
9	R8795	2	Spacer, 8-32 x 1/2" lg x o.25" OD, Nylon
10	7674S06000	4	Platen, PVC
11	R8434	16	Screw, 10-24 x 1/2" skt hd
12	1572S033	16	Post, Platen Support
13	7674S02800	4	Paper Guide
14	7674S02700	4	Expander
15	1472S05200	4	Paper Clamp
16	1572S010	1	Housing
17	1572S020	1	Tube, PVC, 1/2" Drain
18	1572S030	1	Nameplate, Lower
19	1572S035	1	Cover, Front
20	R7880	8	Screw, 10-24 x 3/8" cr pan hd
21	R8845	2	Washer, blk .25 thk
22	R2826	2	Elbow, 90 Deg, 1/4 x 1/4" Tube
23	R8640	16	Clamp, Tube Sleeve
24	R8641	40	Tubing, 0.170 ID x 1/4 OD
25	R2825	3	Tee, 1/4" Tube
26	R7806	10.5	Tube, Polyurathane 1/8" ID x 1/4" OD
27	R2700	4	Bumper, Rubber, 3/4 Dia x 9/16" blk
28	1572S045	1	Plate, Patent, Handimet 2
29	R7832	4	Screw, 8-32 x 5/8" cr pan hd
29	R7850	8	Screw, 8-32 x 3/8" cr pan hd
30	R0612W	12	Washer, #10
31	1572S044	4	Spring Bracket, Paper Roll
32	1572S022	1	Specification Plate
33	1572S016	1	Bar, Roller
34	R2706	4	Gromet, #2754, 1/4 x 7/16 x 3/16"
35	1572S013	4	Roller, Front
36	305143240000	1	Carbimet Roll, 240 GR
36	305143320000	1	Carbimet Roll, 320 GR
36	305143400000	1	Carbimet Roll, 400 GR
36	305143600000	1	Carbimet Roll, 600 GR
37	R7739	0.20	Tubing, 1/8" OD
38	R8755	1	Tee, Male Run 1/8"
39	R7943	1	Reducing Bushing, 1/4" NPT, 1/8" NPT
40	1572S018	1	Valve, Water, 1/4" NPT
41	1572S017	2	Hinge
42	1572S019	1	Connector, 1/8 x 1/4" Tube
43	1572S027	1	Nut, Connector, 1/8"
	R8383	2	O-Ring, 0.187 ID x 0.056" C/S Dia
NS	R0585	1	Tie Strap
NS	R2750	4	Dowel Pin, 1/16 x 1/4"
NS	1572S040	1	Tubing, 1/2" Dia. clear PVC

(NS = Not Shown)