Operator Instructions for Pine AFPIR Rotator

Document LMPIR

IMPORTANT NOTE

This document describes the operation of a product which is no longer manufactured by Pine Instrument Company (Grove City PA) and is not available from Pine Research Instrumentation (Raleigh NC). The information in the attached document was current information at the time the product was still in production by Pine Instrument Company (Grove City PA).

Both Pine Instrument Company and Pine Research Instrumentation consider the Pine AFPIR rotator to be an obsolete product, and on-going support for this product, if any, is extremely limited. Pine now offers several more modern electrode rotator models, and owners of this older model rotator are encouraged to upgrade their equipment.

For more information, please contact us at the address below:

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GENERAL INFORMATION

The AFPIR Rotator is equipped with angular contact, high precision, permanently lubricated bearings. The bearings are packed with a heavy lubricant and when first put into service the spindle should be run at 10,000 rpm without an electrode for 1 to 2 hours. This will insure that the lubricant is properly distributed and should not cause a retardation of the spindle speed with further operation.

Springs are incorporated against the upper bearing to provide the proper preload on the bearings to give zero clearance. These units are checked out in manufacture to insure that the wobble at the end of the electrode is less than .002 inch.

Bearing covers are provided on the outside of the top and bottom bearing to reduce the possibility of foreign material entering the bearing. Care should be exercised also so that strong acids or solvents do not splash on the rotator and attack the bearings or other parts.

Change speeds by pulling the motor bracket by hand to compress the belt tension spring, and shifting the belt position. Refer to drawing no. PIR - 102.

The speeds are as follows:

1. 400 rpm
2. 900 rpm
3. 1,600 rpm
4. 2,500 rpm
5. 3,600 rpm
6. 4,900 rpm
7. 6,400 rpm
8. 8,100 rpm
9. 10,000 rpm

Brushes, belts, and other parts are available from PINE INSTRUMENT COMPANY, 101 Industrial Drive, Grove City, PA 16127. Standard and special electrodes are also available.

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OPERATION

SET-UP AND RUN

This section briefly describes the proper procedures to operate the Rotator in a typical lab system.

1 The experiment should be conducted in an area which has ample room for all equipment, and has conveniently located power outlets.

2 Install the Drive Belt at proper set of pulleys to achieve the desired speed.

3 Turn "off" the Power Switch and connect the Line Cord to a voltage source of the proper rating.

4 Make the necessary connections to the Rotator Brushes, Potentiostat, cell, etc.

5 Install the electrode (see page 4).

6 Turn "on" the Power Switch.

7 Adjust the Electrode Height for proper placement in the cell.

INSTALLING AND REMOVING ELECTRODES

1 Retract the lower brush. NOTE: Be careful not to allow the brush to snap back against the electrode body, as damage to the brush may result.

2 Insert the draw bar into the spindle.

3 Grasp the electrode in one hand, and insert the smaller end into the spindle receptacle hole. With the other hand, tighten the draw bar into electrode. NOTE: Do not excessively twist the electrode body insulator material. It is not necessary to over tighten the draw bar.

4 The brushes may now be moved to the "engaged" position, so that contact is made. The upper brush is the disc contact; the lower brush is the ring contact.

5 Reverse the above procedure to remove the electrode, first disengage the lower brush.

REPLACEMENT OF SPINDLE AND BEARINGS
(Refer to drawing PIR-101)

1 Remove top brush holder and bottom lock nut (9).

2 Pull spindle assembly up out of rotator body. The bottom bearing will remain in the body, and the top bearing will come out with the spindle.

3 Remove nut (12), pulley (6), and top lock nut (8) from spindle assembly.

4 Remove the upper bearing from spindle with your fingers. The bottom bearing can be removed by removing the bottom retainer (11) and taking the bearing out.

5 Be very careful to keep the bearings clean. Remove the rubber housings (2) from the bearings and place the housings on the new bearings.

6 Install the lower bearing with numbers up or the wider gap in the bearings down. Replace bottom retainer (11).

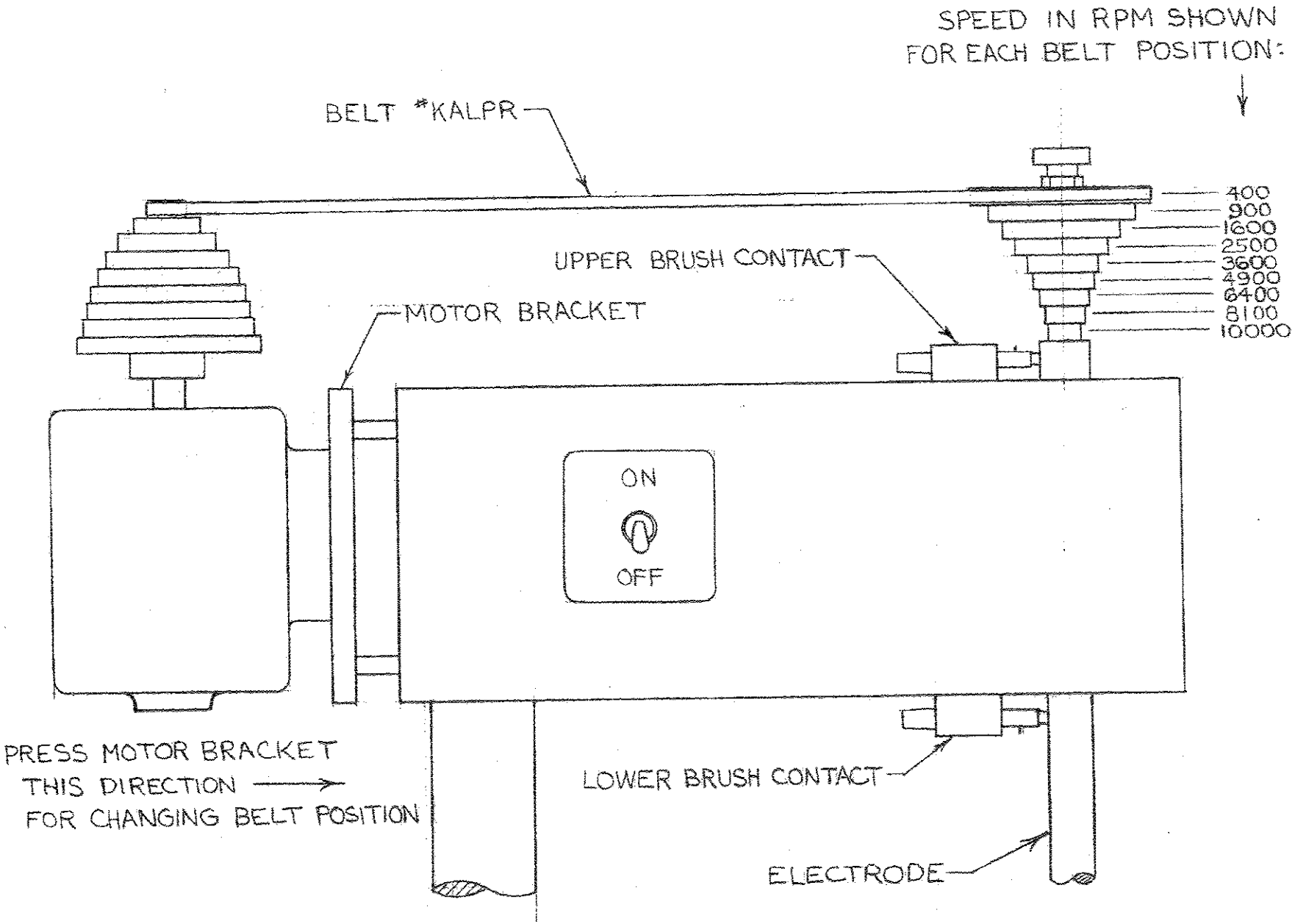
7 Place the upper bearing on the spindle so that the numbers will face down or toward the bottom bearing and the widest gap toward the top lock nut.

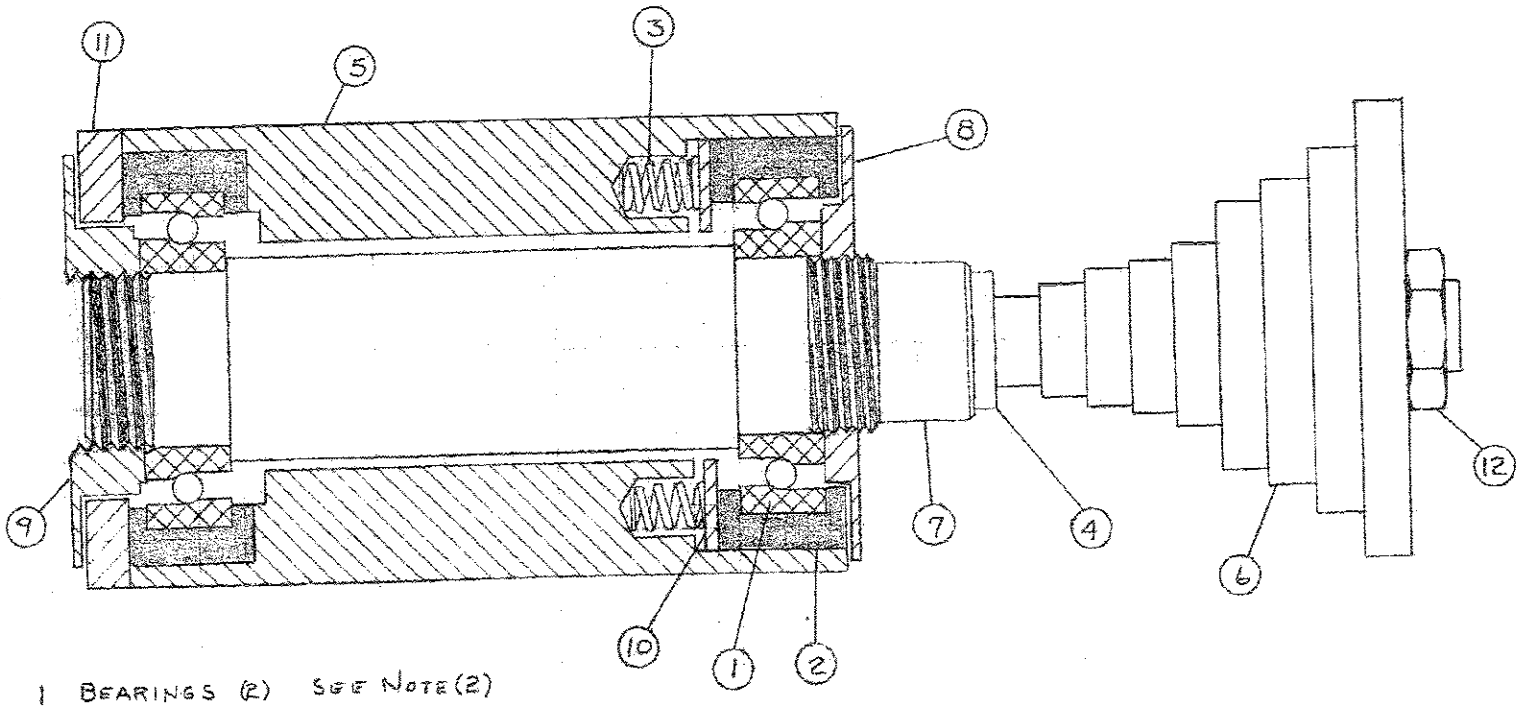
8 Replace top lock nut (8) and install spindle in body. Replace bottom lock nut (9), pulley (6), and nut (12). Tighten all nuts. Replace top brush holder.

9 After re-assembly is complete, run rotator in, starting at 900 rpm for 1 hour in increase up the steps each hour until 10,000 rpm is reached. This positions the lubricant in the bearings for smoother operation.

PIR ROTATOR

DWG. NO. PIR-102





1 Bearings (2) See Note (2)
2 Rubber Housings (2)
3 Springs (4) LC-032D-6SS
4 Spindle
5 Body
6 Pulley
7 Bushing (Brush Contact)
8 Top Lock Nut
9 Bottom Lock Nut
10 Washer
11 Retainer
12 Nut

S/N 16 & up

Note:

(1) 3 Smaller Pulley Steps Are Part Of The Spindle

(2) Bearings Must Be Assembled With The Side With The Widest Gap Toward The Lock Nut

PINE INSTRUMENT CO. GROVE CITY, PA.	
Drawn by T.H	Title Spindle Assy
Date 1-9-70	Drawing No. PIR-101