

AMPEX

CORPORATION

214 CHARTER ST. • EMERSON B-1471
FWX REDWOOD CITY CAL 41
CABLE ADDRESS: AMPEX, REDWOOD CITY
REDWOOD CITY, CALIFORNIA

MAGNETIC RECORDERS

SERVICE BULLETIN

DATE: 20 March 1953

MODEL: 300

BULLETIN NO: 4

PAGE NO: 1

ADJUSTMENT OF AC SOLENOIDS ON RECORDERS BELOW SER. NO. 500

Some difficulty has been experienced with the humming or buzzing of the solenoid which operates the capstan idler, E801. Investigation of the cause of this noise has disclosed that if the linkage has not been adjusted properly, the force required of the solenoid will be greatly increased and therefore cause it to hum.

Looking at the drive assembly from the bottom, the linkage of the capstan idler solenoid can be seen. The link rod A passes through a hole in the arm B that it operates, and there is a rubber washer (C) and adjusting nut (D) on the end. When the solenoid is operated, the rod pulls the rubber washer against the arm to operate it. When the solenoid is seated, the angle E between the rod and the arm should be less than 90° . If this is so, the effective contact point of the washer is on the outside. If the angle between the rod and the arm is greater than 90° when the solenoid is seated, the contact point of the washer on the arm is on the inside, effectively reducing the moment arm by a considerable amount, and therefore requiring much greater force to be exerted by the solenoid.

The importance of maintaining the above angle E below 90° was only recently discovered, and it is possible that some machines have been shipped in which this angle might be too great. While no machines have been shipped with noisy solenoids, it is possible that if the above adjustment is not proper the solenoids may become noisy in use. Should this be the case, the adjustment can be corrected as follows:

It will be noted that the capstan idler arm shaft F is connected to the operating shaft G below through a U-shaped torque link H. If the bottom (or shorter) arm of this link H is bent in a clockwise direction (when looking at the link from the bottom or short arm end), this will effectively reduce the angle E. In order to bend this arm, it is necessary to remove link H and hold it in a vice. The link can be removed by forcing off the spring-lock washers which position the lower arm (I and J) and which attach the return spring at the top (K). The proper value for the angle E is approximately 85° , or when the arm H is perpendicular to the plane of the solenoid base plate.

If the angle E is changed, it will be necessary to re-set the capstan idler adjustment D. This adjustment is set so that when the capstan idler just touches the capstan, the solenoid is $1/8$ inch shy of seating. A simple way of making this setting is to place a piece of material $1/8$ inch thick between the solenoid armature and body and clamp the armature down on it. Then tighten the nut D until the capstan idler just touches the capstan.

It may also be necessary to reset the capstan idler solenoid Stop L. This stop should be set so that at no time during fast winding does the tape touch the capstan idler.

AMPEX

CORPORATION

934 CHARTER ST. • EMERSON 8-1471
TWX REDWOOD CITY CAL 47
CABLE ADDRESS: AMPEX, REDWOOD CITY
REDWOOD CITY, CALIFORNIA

MAGNETIC RECORDERS

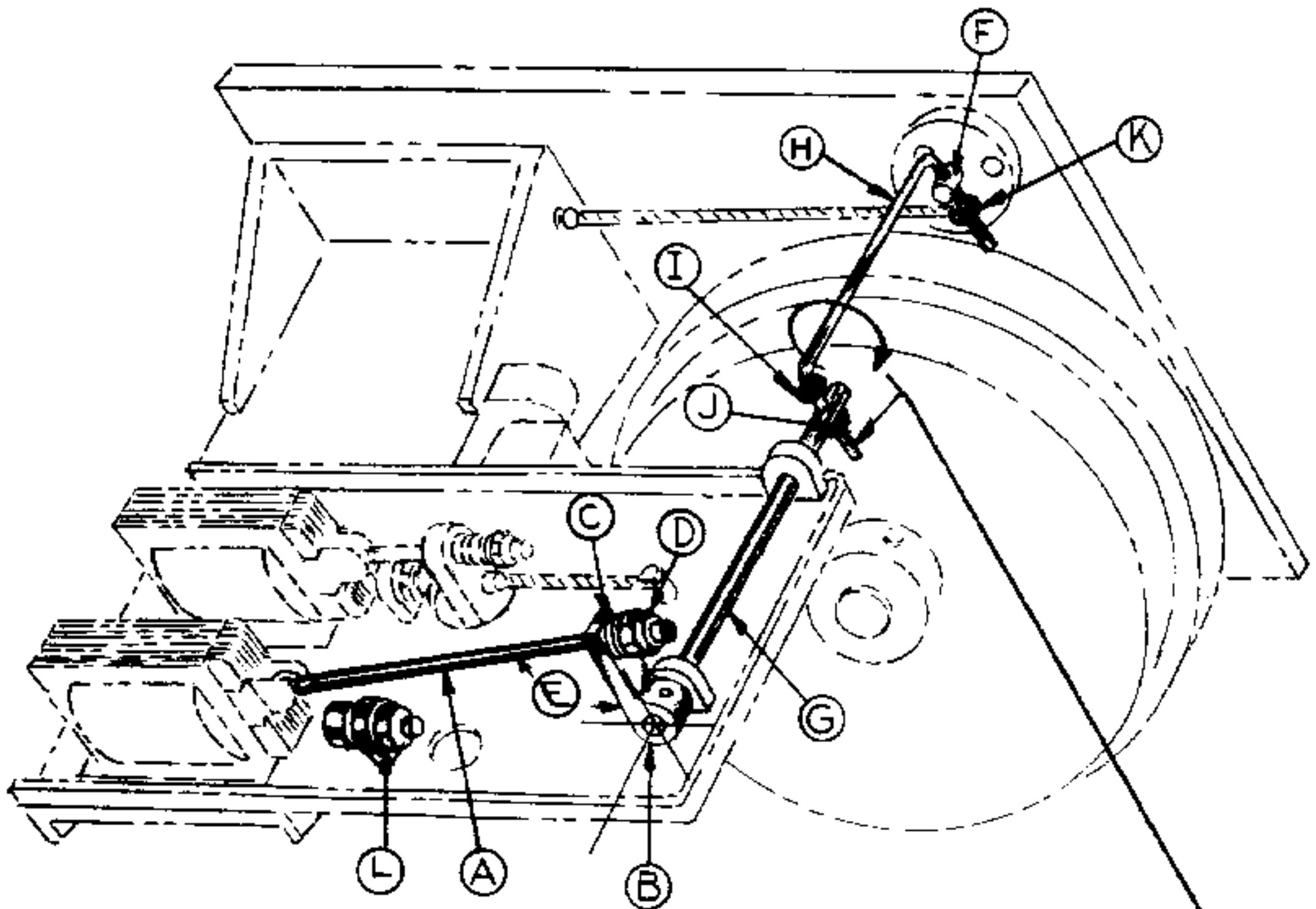
SERVICE BULLETIN

DATE: 20 March 1953

MODEL: 300

BULLETIN NO: 4

PAGE NO: 2



TO REDUCE ANGLE E, BEND
THIS ARM CLOCKWISE WITH
RESPECT TO UPPER ARM. RESET
ADJUSTING NUT D & L.

ANGLE E MUST BE LESS THAN 90° WHEN
CAPSTAN SOLENOID IS SEATED.