



# DESCRIPTION • ADJUSTMENT • MAINTENANCE INSTRUCTIONS

## CAM LIMIT SWITCHES

Type A — Class 15-085

600 Volts • 10 Amperes A-C • 250 Watts D-C

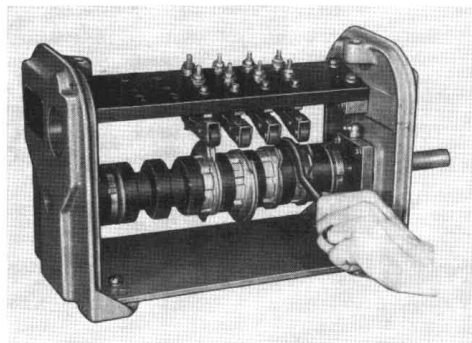


FIG. 1. Adjusting Cams.

**CAM LIMIT SWITCHES** are of the rotating cam type designed for continuous rotation in either direction or for reversing service. They are suitable for heavy duty applications in steel mills, on bridges, skip hoists, or other types of machinery where automatic or semi-automatic operation is desired. They are available in four frame sizes; A-3, A-6, A-9 and A-12, having a maximum of 3, 6, 9 and 12 switches respectively. Speed of rotation should not be less than 10, nor more than 80 rpm. on A-C. and D-C. with permanent magnetic blowouts on switch units. Minimum rpm. on D-C. is 20 with standard switch units.

### DESCRIPTION

These limit switches are furnished with either NEMA I sheet steel enclosures, sheet steel weather-proof or water-tight enclosures.

All have dust-tight ball bearings with fittings for pressure lubrication. Shaft extensions are  $\frac{3}{4}$ -inch diameter with  $\frac{5}{16}$  inch wide by  $\frac{3}{32}$ -inch deep keyway. Double extended shafts can be provided when ordered.

Switch units are spring closed, cam opened, and have silver button contacts. They can be removed without disturbing the wiring by taking out one screw.

### ADJUSTMENT

Cams may be easily and independently adjusted and positively locked in any desired position. Telescoping moulded insulators held between clamping nuts at each end of the shaft have cylindrical outer surfaces around which the cams can be turned to their desired position. Two cams are provided for each switch unit, permitting one cam to slide past the other for changing the angular travel—throughout which the switch contacts are closed or opened.

To lock the cams when their correct position is determined, it is necessary only to turn a special cam locknut a few degrees. This exerts heavy sidewise pressure against the cams and effectively locks them in position. Adjusting one set of cams in this manner does not disturb the adjustment of other cams.

A spanner wrench is included with each switch for use in adjusting the cams.

**Replacing Cams.** Cams are made of two parts which interlock together. When it is necessary to change or replace cams, loosen the clamping nut at one end of the shaft assembly enough to allow the moulded insulators to be moved apart along the shaft approximately  $\frac{3}{8}$ ". The two parts of the cams can then be separated (Figure 2) and removed.

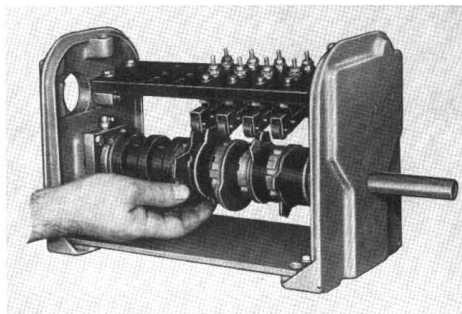


FIG. 2. Replacing Cams.

## **CAM LIMIT SWITCHES**

When reassembling, mount the new cams in place, turn all the cam lock nuts to their loosest position, push the moulded insulator together with all cams fully unlocked, then tighten the clamping nut. If necessary, shift both clamping nuts so that cams will strike the switch rollers approximately at their center.

### **MAINTENANCE**

Note the following important points:

1. Lubricate the shaft bearings with a good grade of ball bearing grease.
2. Inspect the limit switch often enough to see that parts are in good operating condition and clean.
3. Keep all current carrying connections tight.
4. Do not dress contacts unless they are badly pitted. Use sandpaper or a fine file for the purpose.
5. Keep covers in place.

### **REPLACING CONTACT RINGS**

Once the switch is assembled, the contact rings cannot be replaced without first removing and disassembling the shaft.

**HIGH SPEED LIMIT SWITCHES** are of the commutator type, designed for continuous high speed rotation in either direction. They are available in 2 frame sizes; A-3HS and A-4HS having a maximum of 3 and 4 circuits respectively. Maximum speed of rotation is 600 RPM.

Construction is the same as the cam type limit switch, except that contact rings and brushes are used in place of cams and switch units.

Contact rings are individually adjustable in the same manner as the cam type switch.



**WESTINGHOUSE ELECTRIC CORPORATION**

**BUFFALO PLANT**

**• GENERAL CONTROL DIVISION •**

**BUFFALO 5, N. Y.**

(Rev. 1-69) Printed in U.S.A.