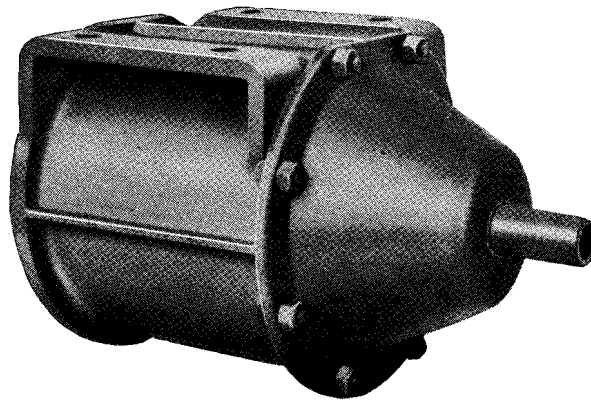




AIR BRAKE CYLINDERS



Trade "Comprestall" mark
Steel Air Brake Cylinder

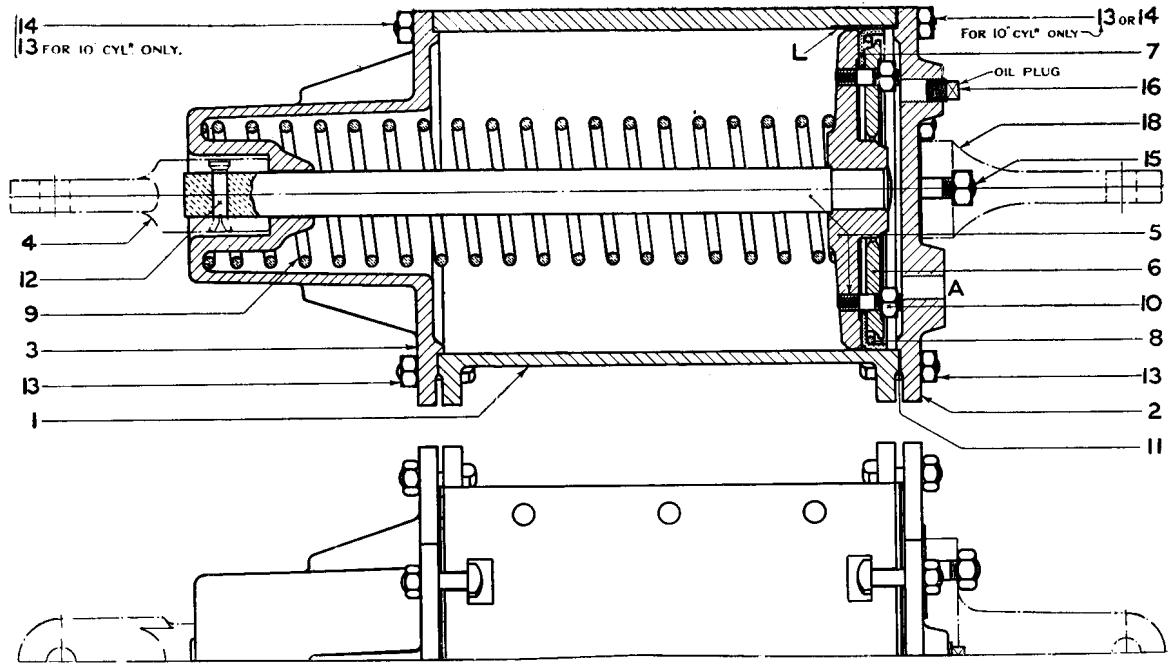
THE WESTINGHOUSE BRAKE & SAXBY SIGNAL CO. LTD.

82 YORK ROAD KING'S CROSS, LONDON, N. 1.

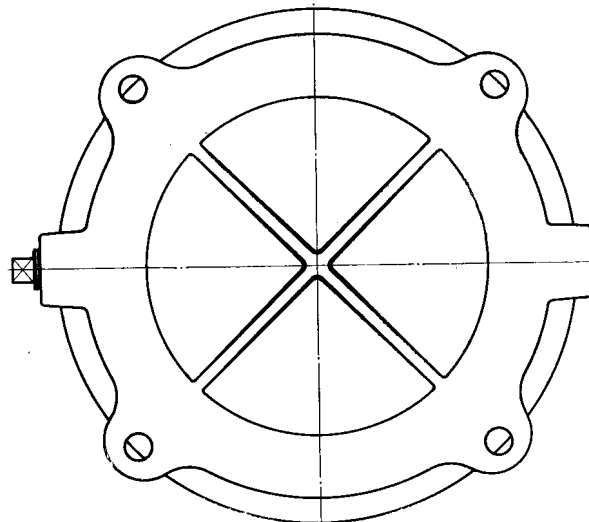
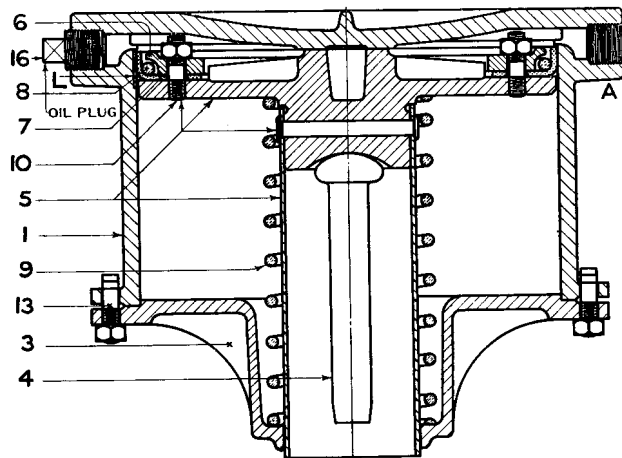
Telegrams: "Westinghouse. Kincross, London. Telephone 6432 Terminus.
(6 lines.)

WORKS: CHIPPENHAM.

APRIL 1934



HORIZONTAL AIR BRAKE CYLINDER



VERTICAL AIR BRAKE CYLINDER

WESTINGHOUSE AIR BRAKE CYLINDERS.

The following particulars and maintenance instructions apply equally to the "Comprestall" pressed steel type of brake cylinder.

The illustrations show alternative types of brake cylinders. In the case of the horizontal cylinder, the type "H" is shown and the fulcrum bracket on the cylinder cover and the crosshead on the piston rod are shown dotted. Horizontal cylinders are also supplied with trunk pistons as used in the vertical cylinders, and they are then known as type "J."

It should be noted that the spring in each brake cylinder is used in order to return the piston to its full release position when the air pressure has been released from the cylinder. These springs are not intended to provide any return effect for the brake rigging which the cylinders operate, and rigging friction should be overcome by the provision of separate springs especially for this purpose.

Brake blocks should be taken up frequently and in the case of the automatic brake the piston stroke must always lie within the figures given below.

Automatic Brake	Maximum working stroke.	Minimum working stroke.
Vertical Brake Cylinder, type V. or V.S., having 6 $\frac{1}{4}$ " total stroke	4"	2"
Horizontal Brake Cylinder, type H. and J. (with trunk piston), having 12" total stroke	8"	4"
Horizontal Brake Cylinders, type H and J. (with trunk piston), having 8" total stroke	5"	2 $\frac{1}{2}$ "
Horizontal Brake Cylinders, type H. and J. (with trunk piston), having 9 $\frac{1}{2}$ " total stroke	6 $\frac{1}{2}$ "	4"

In the case of straight air brakes, the minimum working stroke can be reduced to 2 $\frac{1}{2}$ in. for all type "H" and "J" cylinders. The stroke must not be reduced below 2 $\frac{1}{2}$ in. on account of the leakage groove in the cylinder bore, which must be covered completely before the piston has finished its stroke. In special cases the leakage groove is omitted and the minimum stroke can then be as small as desired.

MAINTENANCE INSTRUCTIONS.

Brake cylinders should be cleaned and examined by removing dome cover and piston.

CLEANING CYLINDERS. Scrape the old lubricant from the cylinder wall and leakage groove and wipe these surfaces clean and dry. Paraffin may be used to assist in removing the old grease, but must be completely removed to prevent serious damage to the cylinder gaskets and the packing leather. If the cylinder wall is rusted, the rust may be removed with emery cloth.

CLEANING PISTON AND PACKING LEATHER. Remove expander ring from piston. Scrape old lubricant from the packing leather, and wipe all surfaces clean and dry. The leather should be carefully examined and removed if brittle, thin at any point, cut, cracked, or otherwise defective.

Examine piston and follower plate for cracks, and tighten up follower plate nuts.

PACKING LEATHER EXPANDER RINGS. Replace the packing leather expander ring if broken or having a permanent set.

FITTING NEW LEATHERS. Examine follower studs for tightness in the piston. Place the leather centrally on the piston, flesh side against the piston. Place the follower

in position. Apply the nuts, bringing them into contact with the follower without tightening. Then draw down uniformly.

LUBRICATION. When assembling, apply a thin coating of "Paragon" grease to the walls of the cylinder with a brush. Fill the expander ring groove, at the same time coating the inside of the leather, and place expander ring in position.

Brake cylinders should be lubricated about every three months with "Paragon" Grease, which should be warmed and then injected into the cylinder through the oil plug in the flat cover.

ASSEMBLING. The return spring should first be placed in position and the dome cover pushed on over the piston rod. The spring should then be compressed so that the rod projects through the cover sufficiently far to enable the crosshead to be fitted.

Then the piston should be stood on end, with the top edge or flat side of the non pressure head flange, and the opening of the expander ring, towards the workman. With the piston in this position, enter it into the cylinder (See Fig. 1 below).

The piston rod should then be slowly raised and the piston moved into the cylinder until the upper portion of the leather engages the cylinder wall. Form this portion of the leather into the cylinder with a dull edge round cornered putty knife, or similar instrument, while the piston rod is gradually raised, taking special care not to crimp or otherwise damage the leather. (See Fig. 2). Then pull upwards and outwards on the piston rod until it is in the horizontal position. Push the piston to its release position and then raise the piston rod to the top of the cylinder to determine whether the expander is in its proper position, which will be indicated by freedom of movement.

The piston should be given a turn or two to re-distribute the oil, by means of a pipe wrench on the piston rod. The piston should be left in a different position from where found, so that a new portion of the leather comes opposite the leakage groove.

The same procedure should be carried out with the trunk piston type of cylinder.

Do not remove the flat cover unless the gasket is leaking.

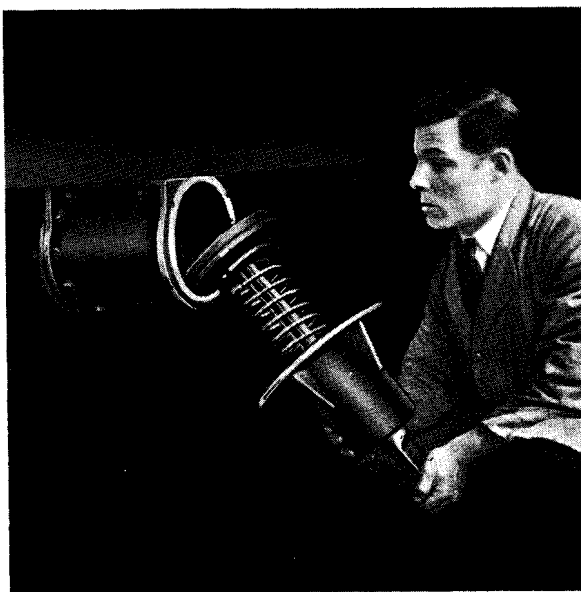


Fig 1

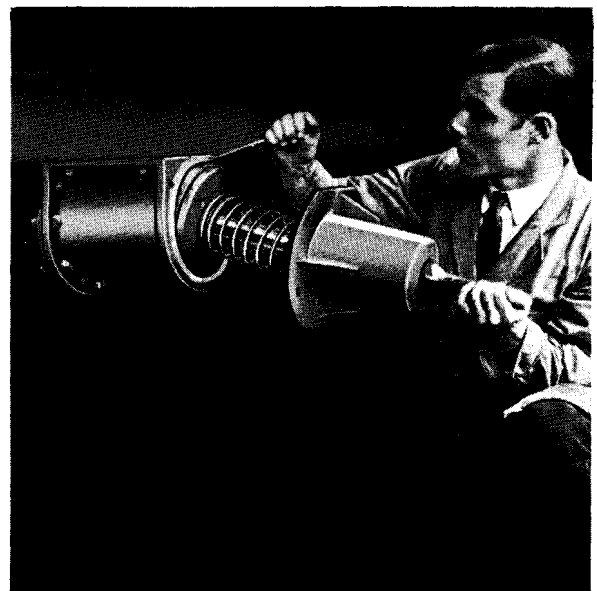


Fig 2