

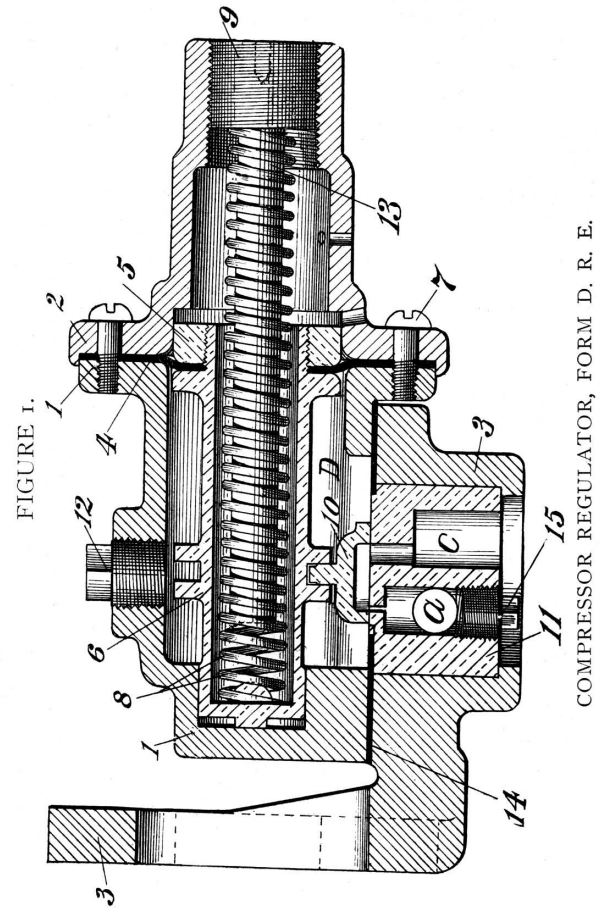
January, 1904

Instruction Pamphlet No. T 5015

Axle-Driven-Compressor Regulator, D. R. E.

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Compressor Regulator D. R. E.

The Regulator, shown in section in Fig. 1, is almost identical in operation to the Form E Electric Governor described in Instruction Pamphlet No. T. 5003, except that the air pressure is admitted to the cylindrical chambers under the suction valves in the axle-driven compressor, instead of under a piston in the governor to actuate a cut-out switch. Therefore, the design is different only in so far as is necessary to meet the different requirements. The Regulator consists of a chamber D (in free communication with the main reservoir) one wall of which is formed by the diaphragm 4 subjected on one side to the reservoir pressure and on the other to the pressure of the atmosphere and a graduated spring 8. Secured to the diaphragm by means of the nut 5 is the guide 6 in which the spring 8 is seated. This guide, supported at the other end in a suitable cavity in the body 1, has a double flange around it into which fits the guiding lug of the slide valve 10, so the movement of the diaphragm is transmitted to the valve without lost motion. This valve bears on the seat 11 which is provided with a narrow rectangular admission port leading to $\frac{1}{2}$ " pipe tapped outlets *a* at either side of the base 3, one of which is to be connected by suitable pipe and flexible connection to the inlet C in the trip fitting casting 26 (Fig. 1, Instruction Pamphlet No. T. 5014) of the compressor, and the other plugged. The valve seat also has an exhaust port *c* (leading to the atmosphere) so located that the cavity in under side of valve 10 just spans the two ports. Thus when maximum pressure (45 lbs. per square inch for this type of equipment) is attained, the adjustment of the spring 8 is such that the

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admission port is slightly uncovered and air from the pressure chamber D of the regulator passes to the chamber under the trip pistons 25 and, lifting the suction valves, cuts the pump out of operation. When the pressure in the main reservoir, and consequently that in the regulator chamber D, falls, the spring tension now being greater than the load on the diaphragm, forces the valve inwardly until the admission port is connected to the exhaust, when the air under the trip piston is released, the suction valves seat themselves and the pump is cut into operation.

Note that the narrow face of the slide valve must be placed over the admission port *a* when putting the regulator together.

INSTALLATION OF THE REGULATOR, D. R. E.

The Regulator should be fastened to a sill at a point as near the compressor as practicable. If the traps in the floor are large enough to permit fastening the regulator to one side of the opening without interfering with free access to the motor, it is an excellent location for it, being easy to get at for adjustment or cleaning. Three holes are supplied in the body 1 (Fig. 1) of the regulator, any one of which may be used for the $\frac{1}{2}$ " connection to the reservoir pipe, the others to be plugged. A union should be placed in this connecting pipe, near the regulator, to facilitate disconnecting it. The tee in the reservoir pipe should be placed as near the regulator and as far from the reservoir as practicable, so that the pump will be cut into action for every application of the brake.

In screwing the pipe into the body of the regulator

be sure the thread is not so long that the pipe enters far enough to strike the valve and prevent its free operation. Put a union in this pipe also, near the regulator for disconnecting. Before fastening the regulator in place, be sure that the slide valve 10 is tight on its seat 11; if such is not the case, open the regulator and clean thoroughly, putting a drop of valvoline oil on the seat and rubbing the valve on same; then without lifting the valve from its seat, replace the body, making sure that the valve is properly placed and that its lug is in the groove between the flanges provided for them on the diaphragm guide 6, as described on page 3.

OILING THE REGULATOR, D. R. E.

Once a month, a few drops of good oil should be put in the Regulator to lubricate the valve, by removing the $\frac{1}{2}$ " pipe plug. Twenty-eight degrees gravity West Virginia crude oil is the best for such purposes, as it does not gum, but engine oil may be used if the special oil cannot be obtained. Keep the Regulator adjusted to cut the pump out of action when 45 pounds pressure has been attained in the reservoir, neither more or less; the brake *must not* be permitted to remain in service with the regulator out of action and the safety valve taking care of the excess pressure. In such an event the pump is working all the time at a high pressure, causing excessive wear and danger of burning the bearings.

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