

The continuous capacity of the motors under forced ventilation is 750 amperes at 235 volts. The motors are supported by the axles on one side and by a nose suspension on the other.

The control system for each half unit consists of one 3,300 volt auto-transformer, three preventive coils, a train line relay, three switch groups, two master controllers, two small storage batteries and a small motor generator set.

The main auto-transformer is located on the side of the cab near its centre. It is connected to the trolley by a high tension cable through an oil circuit breaker provided with a no voltage release protective relay. In case the locomotive should leave the rails and the frame thus become insulated from the ground, this relay would cause the circuit breaker to open and remain open until the ground connection to the locomotive frame had been re-established and the circuit breaker re-set; the three preventive coils are located directly over the blower in No. 1 end of the cab and provide a means of stepping from one transformer tap to another without producing a short circuit in the transformer, or an open circuit to the motors; at the same time, they serve to distribute the motor current among the four switches in the transformer switch groups.

The train line relay is located between the transformer switch groups, its purpose being to enable a number of the wires leading from the master controllers to be used twice, thus cutting down the number of control wires required between locomotives and at the same time shortening the length of the controller drum.

There are three switch groups on each half unit, two being transformer groups and the third the reverse group. The transformer groups are located above the transformer with the train line relay between them. Each group consists of ten electro-pneumatically operated switches. The function of these groups is to connect the motors to the various taps on the auto-transformer to give the requisite speed regulation. These switch groups being very close to the transformer, the leads between the two pieces of apparatus are very short. The third switch group is located on the opposite side of the locomotive and consists of twelve electro-pneumatically operated switches. The switches in this group control the direction in which the locomotive is run; there are four of these switches for each motor, two for operating in the forward direction and two for reversing.

The master controller is so placed that the engineer can have a clear view ahead from his seat and, at the same time, can operate the controller and brake valve handles. Each master controller has two interlocking handles, one being the operating handle and the other the reversing handle. The