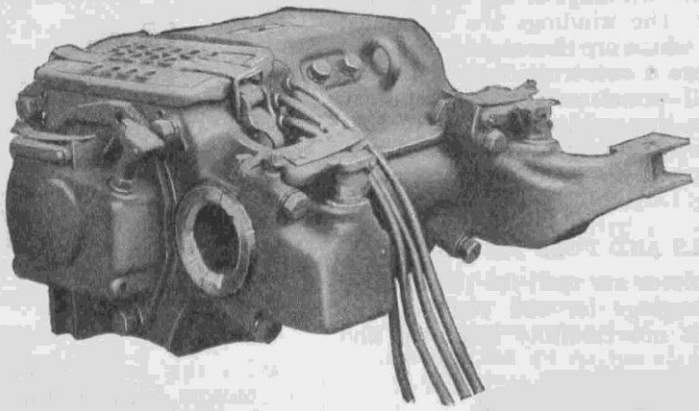
RAILWAY APPARATUS

Standard Railway Motors



GE-265 Railway Motor

This Company manufactures a standard line of railway motors ranging in capacity from 25 h.p. to 140 h.p. at 600 volts. There are eight sizes so graded that a standard motor is available to meet service requirements encountered on most electric railways. This Company also manufactures motors for special applications, including motors for use on large locomotives, subway and elevated lines, narrow gauge railways, trolley busses, gas-electric cars, etc.

Marked advances in G-E railway motors have been made by the use of improved materials, refinement in design, increased ventilation, and reduction in weight. The use of this higher grade material, together with the use of commutating poles, cast steel motor frames, and the effective self-ventilating systems, has resulted in more output per pound of material than before accomplished in the construction of railway motors.

Modern construction and the reduction in weight possible for a given output has resulted in the replacement of many of the older design motors at a great saving in maintenance and operating costs.

The successful operation of this standard line of railway motors under severe operating conditions is best shown by the fact that there are in operation more than 50,000 G-E ventilated motors.

The manufacture of a standard line of motors, together with the large demand for each of these standards, has resulted in lower prices and more prompt deliveries.

Particular attention has been given in the design of this standard line of motors to secure long life and low maintenance. Some of the improvements incorporated are described here.

Heat treated steel is used in the armature shafts. The quality of steel in the gears and pinions has been improved, and improved methods of heat treatment have been developed. Bearing metals are of tin base babbitt of the highest quality obtainable. High-grade varnishes are used for insulating purposes. Axle brackets are overhung in such a manner that a large part of the weight of the motor is taken off the axle cap bolts.

The frame heads are made to a driving fit in recessed openings in the ends of the magnet frame and are held in place by tap bolts securely locked. Each frame head is provided with two tapped holes diametrically opposite each other, into which bolts can be screwed for forcing the heads off each other.

BEARINGS AND LUBRICATION

The armature bearing linings are made of bronze, lined with a thin layer of babbitt, and are designed to prevent injury to the armature or pole pieces in case the bearings become overheated. The axle linings are of bronze or malleable iron, babbitted, depending upon the size of the axle. A sheet-steel cover is clamped between the axle caps, entirely enclosing the axle and protecting the linings from dirt. Oil and waste lubrication is used.

ARMATURES

Railway Motor Armature

The armature core is built up of soft sheet steel on laminations keyed to the armature shaft and so constructed that the shaft may be removed

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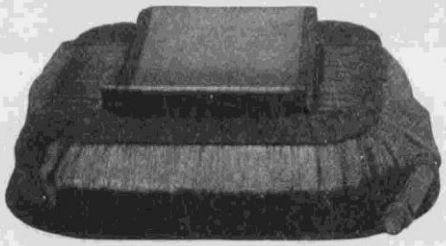
without disturbing the windings or the connections to the commutator. The windings are assembled in units or polycoils which are thoroughly insulated and treated to secure a construction that insures reliable service. All armatures have temporary bands put on while the armature is hot so that coils are drawn down securely in position. Armatures are then allowed to cool and permanent banding applied.

FIELD COILS AND POLE PIECES

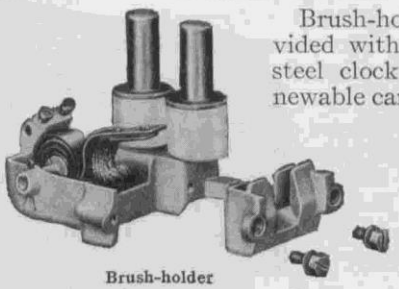
Laminated pole pieces are used for the exciting fields, and drop forgings for the commutating fields. All field coils are carefully insulated and



Exciting Field Coil Assembled with Pole Piece and Flange

impregnated with insulating compound by the vacuum process. Both commutating and exciting field coils are held firmly by spring tension to prevent movement of coils on the pole pieces.

BRUSH-HOLDERS



Brush-holder

Brush-holders are provided with an adjustable steel clock spring and renewable carbon-way boxes.

GEARING

With this line of modern motors, General Electric heat-treated gears and pinions are furnished. This gearing is universally recognized as the best finished product that modern factory and machine shop methods have developed.

Forged Pinion

VENTILATION

In the ventilation of these motors, both intake and exhaust openings are so arranged that there is a minimum liability of admission of either moisture or dirt.

HORSE POWER AND WEIGHTS OF STANDARD RAILWAY MOTORS

Type	H.P., 1 Hr. Rating, 600 Volts	Dia. Car Wheels in In.	Approx. Wt. Complete in Lb.
GE-264-A	25	24–26	1000
GE-264-B	25	30–33	1130
GE-265-A	35	24–26	1415
GE-265-C	35	30–33	1500
GE-247-A	40	24–26	1740
GE-247-D	40	30–33	1870
GE-203-P	50	33	2280
GE-275-A	60	26–28	2410
GE-275-D	60	30–33	2640
GE-263-A	65	33	3050
GE-240-A	110	33	3840
GE-254-A	140	33	4515

SELECTION OF MOTORS

As the reputation of the General Electric Company's motors, and the interest of its customers are affected by the proper selection of motors for any given service, the Company desires to aid and cooperate with its customers in selecting motors best adapted for their service. The Company's experience enables it to render valuable assistance, and long experience has shown that coöperation is mutually beneficial.

For complete information, refer to our nearest Sales Office.