

## HEAVY DUTY BATTERY FOR MUSKETEERS

**MODELS AFFECTED:** Model 23 (M-1, M-2, M-3, M-7, M-8, M-10 thru M-339, and M-348 thru M-371).

A heavy duty battery installation is now available for Musketeers. This heavy duty battery provides 12 volts of current for 35 ampere hours as compared to the 25 ampere hours of current provided by the standard 12 volt battery used on Musketeers. The additional current is particularly useful when starting the airplane under cold weather conditions. The heavy duty battery can be used to replace the existing battery without further modification on Musketeers (serials M-4 thru M-6, M-9, M-340 thru M-347, and M-372 and after) already equipped with a battery box.

When installed on Musketeers (serials M-1 thru M-3, M-7 and M-8, M-10 thru M-339, and M-348 thru M-371) equipped with the self-vented battery, the 118649 heavy duty battery requires the installation of the battery box. The battery box may be installed as follows:

1. After removing the self-vented battery installation, place the doubler over the existing vent and drain holes in the fuselage skin, then drill holes through the doubler and skin with a size 30 drill to match the rivet pattern shown in the illustration.
2. Secure the doubler in place over the vent and drain holes with MS20470AD4-5 rivets.
3. Insert a plug in each of the holes and drill holes through the plugs and doubler with a size 30 drill as indicated in the illustration.
4. Rivet each plug to the doubler with three MS20470-AD4-5 rivets.
5. Cut holes for the drain and vent tubing for the battery as shown in the illustration.
6. Position the support bracket for the battery box so that the hole in the bracket is aligned with the drain hole in the belly of the fuselage.
7. Using a size 30 drill, drill holes in the aft bulkhead of the baggage compartment and in the belly of the fuselage to match the rivet hole pattern in the flanges of the bracket.
8. Rivet the bracket in place with MS20470AD4-5 rivets.
9. Center the battery box between the end plates protruding above the shelf portion of the bracket.
10. Using a size 11 drill, drill 2 holes in each end of the battery box to match those in the end plates of the support bracket.
11. Secure the battery box to the end plates with AN520-10R8 screws.
12. Cut an AN931-24S28 grommet to fit in the drain hole around the drain tube.
13. Install the grommet in the 1-1/2 inch diameter hole in the fuselage, and insert the drain tube through it so that the open end of the tube extending below the belly of the fuselage faces aft.
14. Secure the upper end of the drain tube around the tube protruding from the bottom of the battery box with the CS20A clamp.
15. Cut an AN931-24S28 grommet to fit in the vent hole around the vent tube, and insert the grommet in the hole in the bottom of the fuselage.
16. Insert the vent tube through the grommet with the open end extending through the bottom of the fuselage facing forward.
17. Secure one end of the duct around the tube protruding from the battery box and the other around the vent tube in the bottom of the fuselage with CS17A clamps.
18. Install the MS21919DG18 clamp around the duct and secure the clamp to the bracket extending from the aft side of the battery box support bracket with the AN520-10R7 screw and MS20365-1032 nut.
19. Secure the existing relay to the bracket on the battery box with the existing screws, nuts, and washers.
20. Install the battery in the battery box and make the necessary electrical connections.

PART NUMBER	DESCRIPTION	QUANTITY
118649	Heavy Duty Battery	1
169-364010-637	Battery Box Assembly	1
AN520-10R8	Screw	4
169-364010-27	Battery Box Drain Tube	1
CS20A	Drain Tube Clamp	1
AN931-24S28	Grommet	2
111716AX2XX34	Battery Box Vent Duct	1

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Service Letter No. 64-8  
 Model 23

PART NUMBER	DESCRIPTION	QUANTITY
MS21919DG18	Vent Duct Clamp	1
AN520-10R7	Screw	1
MS20365-1032	Nut	1
169-364010-29	Battery Box Vent Tube	1
CS17A	Vent Tube Clamp	2
169-364010-25	Battery Box Support Bracket	1
B74879-1 (169-364010)	Plug	2
B74879-3 (169-364010)	Doubler	1
MS20470AD4-5	Rivets	32

