Chapter 70

ACTUATOR, WESTERN, TYPE EJ 25, Mk. 17 AND 17A

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

LEADING PARTICULARS

Actuator, Western, Type E.J. 25, Mk. 17	*Ref. No. 5W/1347*
Actuator, Western, Type E.J. 25, Mk. 17A	*Ref. No. 5W/*
Voltage range	*25 to 29 volt. d.c.*
Normal voltage	*28 volt. d.c.*
Normal working load	*25 lb.*
Current at normal working load	*0·85 amp.*
Maximum working load	*50 lb.*
Stalling load	*100 lb.*
Stall current	*2·25 amp.*
Length of stroke	*1·0 in.*
Time of stroke at normal load	*5·5 sec. per in.*
Time rating	*1 minute*
Fixing centres	
Extended	*7·35 in.*
Retracted	*6·35 in.*
Worm	*Single start*
Ambient temperature range	*—60 deg.C. to +90 deg.C.*
Maximum altitude	*60,000 ft.*
Weight	*1 lb. 10 oz.*

Introduction

1. The linear actuators, Type EJ 25, Mk. 17 and Mk. 17A are designed to operate within the range given under the heading Leading Particulars. They are identical in design and performance, but differ only in the orientation of the Breeze plug fitted, see para 6. These actuators are rated to operate for one minute at a nominal load of 25 lb., with a current consumption not exceeding 1 amp.

DESCRIPTION

2. The Western, Type EJ series of actuators is described in A.P.4343, Vol. 1, Sect. 17, Chap. 2 and App. 7. They differ from others in the series, in respect of fixing centres, type of end fittings, gearbox reduction ratio, operating times, current consumption and loads.

3. The gearbox embodies a three stage epicyclic gear train, providing a total reduction ratio of approximately 78·6: 1.

4. The end fixings of both actuators are the the same, being secured at the moving end by a bolt passing through a self-aligning eye, and at the fixed end by a trunnion held in position by a bolt passing through two fixed lugs, which are integral with the motor housing.

Application and loading

5. Two snap action limit switches are adjusted during assembly to provide a 1·0 in. stroke of the piston. A functional test should be performed by connecting the actuator to a 28 volt. d.c. supply and applying loads of 0, 12 and 25 lb. The maximum current consumption and the time the piston takes to complete its 1·0 in linear travel should not exceed the values given in the following table.

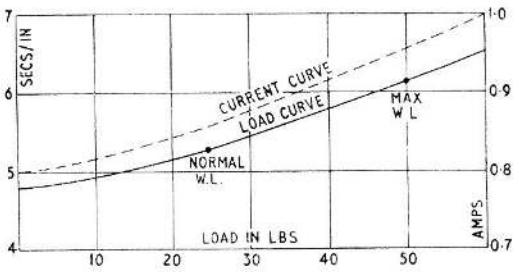

Fig. 1. Performance Characteristics.

Load (lb.)	Max. time (sec.)	Max. Current (amp.)
0	4·9	0·9
12	5·0	0·95
25	5·25	1·0

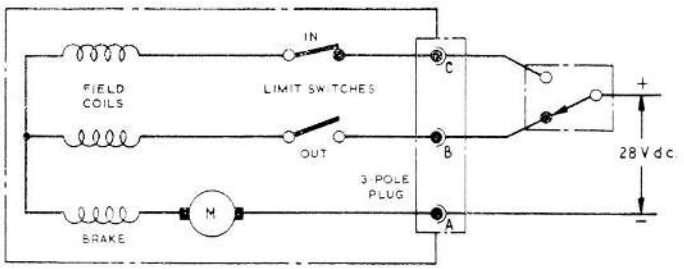

Fig. 2. Circuit Diagram.

Note . . .
Tolerances, if required, are shown on installation drawing (fig. 3).

Electrical connection

6. A 3-pole Breeze plug, Type CZ48993 is fitted to both actuators, but with the EJ 25, Mk. 17A actuator, the pin location insert is orientated to position 5 and the Breeze plug is then designated CZ48993/5, see Installation drawing (fig. 3). Internal wiring connections are shown in circuit diagram (fig. 2).

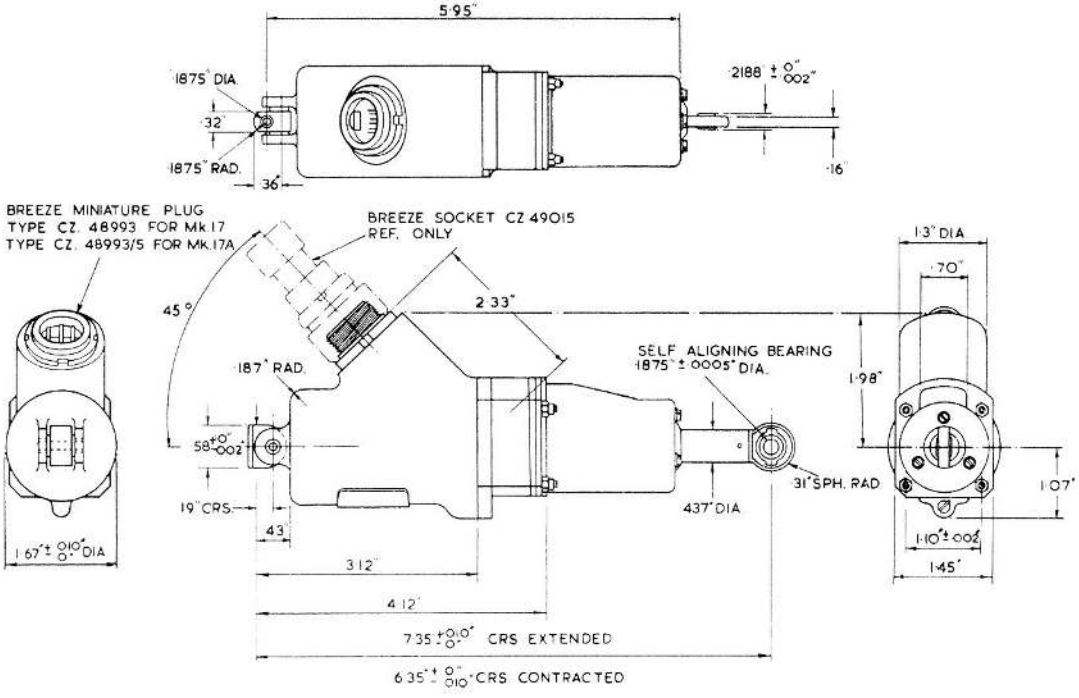

Fig. 3. Installation Drawing.

INSTALLATION AND SERVICING

7. Installation and servicing instructions are contained in A.P.4343, Vol. 1, Sect. 17, Chap. 2 and App 7, and in the relevant Aircraft Handbook.

Insulation resistance test

8. Using a 250 volt insulation resistance tester, test between plug pins and earth. The insulation resistance must not be less than 2 megohms.

9. Due to the humid conditions prevalent in an aircraft when in service, the permissible insulation resistance may be reduced to not less than 50,000 ohms.

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