

## Chapter 31

### ACTUATOR, WESTERN, TYPE ERJ60, Mk. 12

#### LIST OF CONTENTS

	Para.		Para.
Description .....	1	Electrical connection .....	3
Application and loading .....	2		

#### ILLUSTRATION

	Fig.
Installation drawing .....	1

#### LEADING PARTICULARS

##### Actuator, Type ERJ60, Mk. 12

Voltage range .....	18 to 29 volts d.c.
Rating .....	1 min.
Normal full load .....	60 lb. in.
Maximum working load .....	85 lb. in.
Angular travel of coupling .....	90 deg. (+0 deg. —2 deg.)
Weight .....	2 lb. 5 oz.
Overall length .....	6.10 in.
Electrical plug .....	Mk. 3 Breeze (CZ.27164/1)

#### Description

1. The Western Type ERJ60 series of actuators is described in A.P.4343, Vol. 1, Sect. 17. The Mk. 12 varies from others in this series only in amount of angular travel of the coupling with its visual indicator and in the type of electrical connection plug.

#### Application and loading

2. The snap action limit switches in the Mk. 12 are adjusted during assembly to permit 90° angular travel of the coupling shaft. This adjustment requires the use of a manufacturers special rig and no attempt should be made to alter the setting. Detail of the movement of the coupling shaft relative to the mounting flange is shown in fig. 1. The operating times under various

loadings at nominal 28 volts are as follows:—

Load (lb. in.)	Max. current (amp.)	90° Travel (Sec.)
0	3	2.2
30	3.8	2.6
60	4.2	3.3

#### Electrical connection

3. A Mk. 3 miniature Breeze, 6-pole plug is fitted of which pin F is not used. When connecting the free socket to this plug care must be exercised to ensure correct alignment and so avoid damaging the moulded projection of the plug.

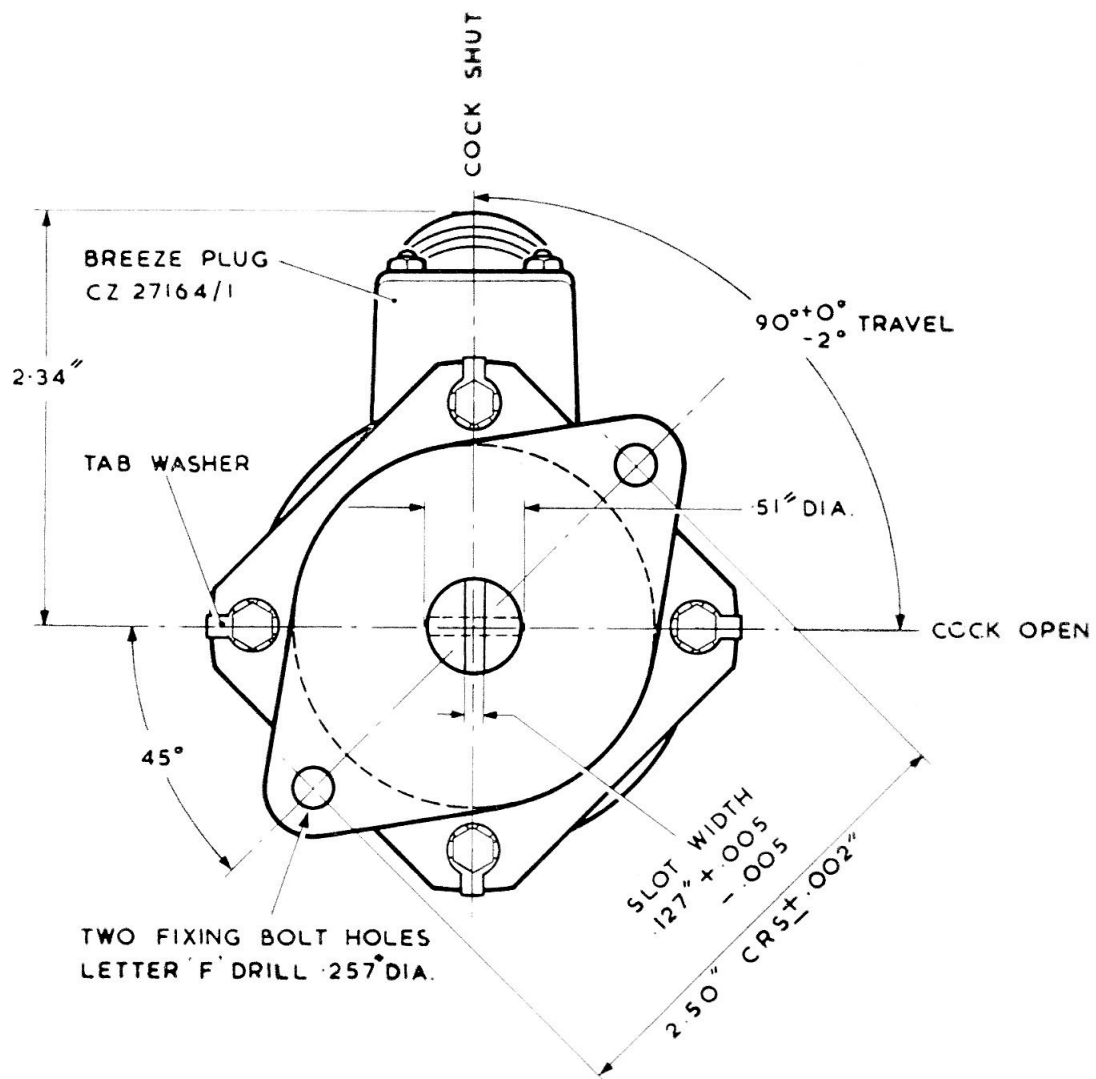


Fig. 1. Installation drawing

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## Chapter 32

# ACTUATOR, WESTERN, TYPE ERJ 60, Mk. 19

### LIST OF CONTENTS

	Para.		Para.
Introduction	1	Application and loading	3
Description	2	Electrical connection	4
		Installation and servicing	5

### LIST OF ILLUSTRATIONS

	Fig.		Fig.
Installation drawing	1	Performance curves of motor	2

### LEADING PARTICULARS

<b>Actuator, Western type ERJ 60, Mk. 19</b>	Stores Ref. 5W/1393
Voltage range	18 to 29 volt d.c.
Nominal current	4.2 amp.
Stall current	6.5 amp.
Normal working load	60 lb/in.
Maximum working load	85 lb/in.
Angular travel of coupling	85 deg., $+0$ deg. $-2$ deg.
Time of angular travel at nominal load	1.35 sec.
Distance between fixing centres	2.5 in. $\pm 0.002$ in.
Rating of motor	1 min.
Temperature range	$-60$ deg. C. to $+90$ deg. C.
Weight	2 lb. 5 oz.

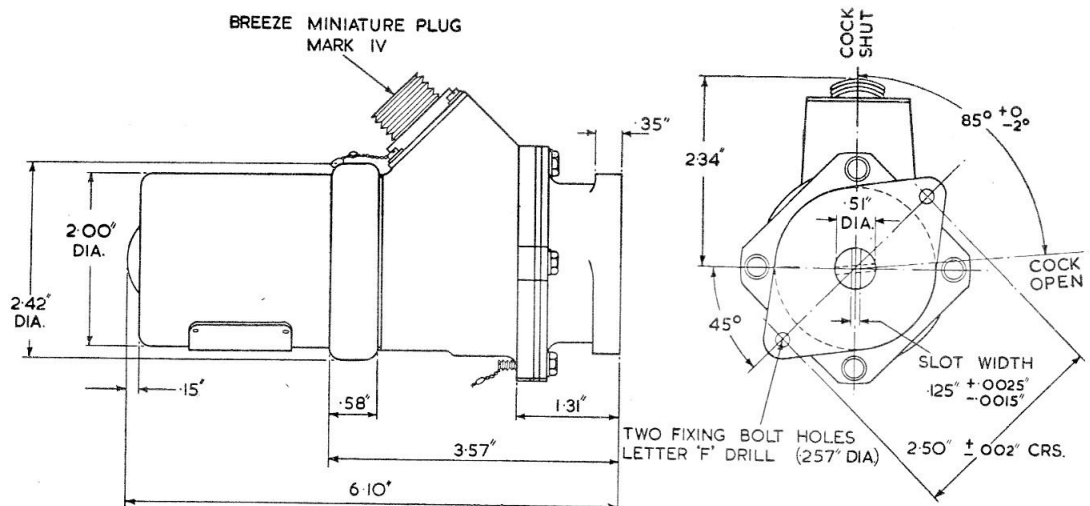


Fig. 1. Installation drawing

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(A.L. 10, Jan. 58)

### Introduction

1. The rotary actuator, Type ERJ 60, Mk. 19, is designed to provide a torque, clockwise or anticlockwise as necessary, for situations requiring a rotational movement under remote control, within the ranges given under the heading Leading Particulars. It is rated to operate for one minute at a nominal load of 60 lb./in. with a current consumption not exceeding 4.3 amp.

### DESCRIPTION

2. The Western Type ERJ 60 series of actuators is described in A.P.4343, Vol. 1, Sect. 17, Chap. 1 and App. 7. The Mk. 19 differs from others in this series in the amount of angular travel of the couplings, operating times and current consumption.

### Application and loading

3. The limit switches are adjusted during manufacture to provide 85 deg. angular travel of the coupling shaft. All necessary information concerning the movement of the coupling shaft relative to the mounting flange is given in the installation drawing (fig. 1). A functional test should be performed by connecting the actuator to a 28-volt d.c. supply and applying loads of 0, 30 and 60 lb./in. The maximum current consumption and the time the coupling takes to complete its 85 deg. angular travel should not exceed the values given in the following table :—

Load (lb./in.)	Max. Current (amp.)	Max. Time (sec.)
0	3.1	1.15
30	3.7	1.25
60	4.3	1.35

### Electrical connection

4. Electrical connections are identical with those described in A.P.4343, Vol. 1, Sect. 17, Chap. 1, and App. 7, dealing with Western type actuators. Internal wiring connections are given in the circuit diagram, (fig. 2) of the Appendix.

### Installation and servicing

5. Installation and servicing instructions are given in A.P.4343, Vol. 1, Sect. 17, Chap. 1 and App. 7.

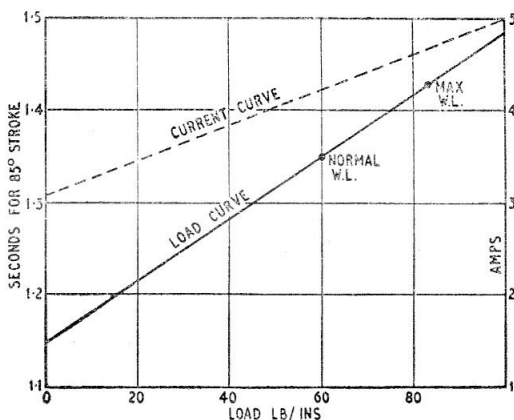


Fig. 2. Performance curves of motor

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