

## Chapter 14

### ACTUATOR, WESTERN, TYPE EJ 50, Mk. 24

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#### Introduction

1. This actuator differs from that described in A.P.4343, Vol. 6, Sect. 17, Chap. 2, App. 15 on Western EJ 50 series in respect of end fittings, length and time of stroke, reduction gears, worm thread, electrical connection and limit switch assembly. Details of these variations are given below.

#### DISMANTLING, INSPECTION, REPAIR AND RE-ASSEMBLY

2. These are all described in A.P.4343, Vol. 6, Sect. 17, Chap. 2, App. 15.

#### End fittings

3. This actuator is attached at the fixed

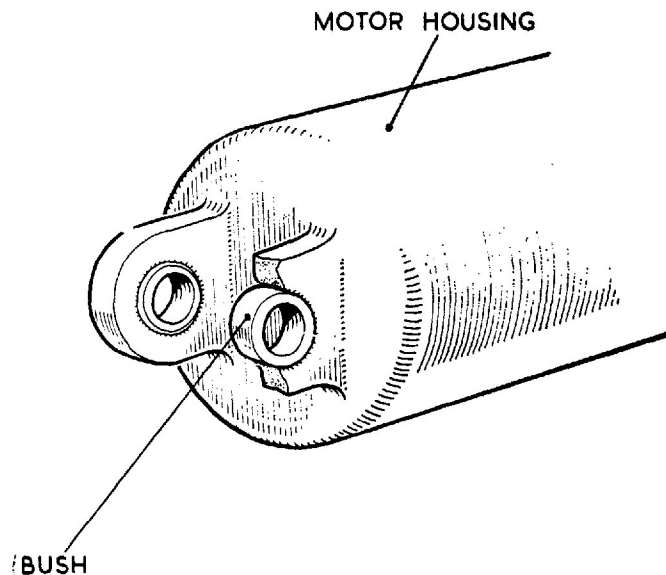
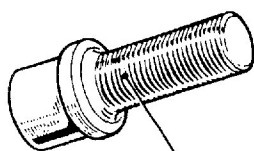


Fig. 1. Fixed end fitting



SCREWED PLUG

Fig. 2. Moving end fitting

end by a bolt or pin, (not supplied with the actuator) which passes through a  $\frac{1}{4}$  in. diameter hole in the fixed trunnion. This trunnion is integral with the motor housing. The moving end of the actuator is attached by a  $\frac{1}{4}$  in. screw plug.

#### Fixing centres and stroke

4. The fixing centres, length and time of stroke, are as follows:—

- (a) Extended centres 10.022 in.  $+0.01$  in.  
—0
- (b) Retracted centres 8.022 in.  $-0.01$  in.  
+0
- (c) Mid-position 9.022 in.  $\pm 0.02$  in.
- (d) Stroke, full length 2.00 in.
- (e) Time of stroke at  
24V and 50 lb. oppos-  
ing load ..... 10.5 seconds

#### Reduction gears

5. Three-stage epicyclic reduction gears are fitted, having a total reduction ratio of 118 : 1.

#### Worm

6. The worm is a two start, 16 threads per inch right-hand Acme thread.

#### Electrical connection

7. This actuator is fitted with a 4-pole Breeze plug, Ref. No. 5X/4003.

#### Limit switch assembly

8. The limit switch assembly in this actuator includes a mid-position switch in addition to the normal inboard and outboard switches.

### TESTING

#### Actuator

9. Load tests as follows are to be carried on the actuator after repair and re-assembly.

- (1) A running-in test of approximately 10 runs in each direction to be made at 24 volts d.c. and 50 lb. opposing load.
- (2) A functional test should be performed at 24 volts d.c. and opposing loads of zero, 50 lb. and 100 lb. The current consumption and the time the piston takes to complete its full travel of 2.00 in. should not exceed the following figures:—

Load (lb.)	Max. current (amp.)	Max. time (sec.)
0	1.2	8.5
50	1.5	10.5
100	2.0	13.0

#### Motor

10. The motor tests are described in A.P.4343, Vol. 6, Sect. 17, Chap. 2, App. 15.

RESTRICTED