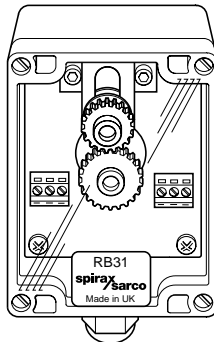
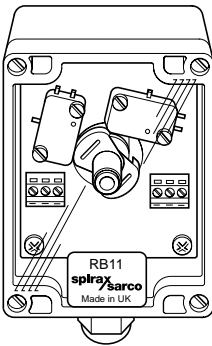


## RB11 and RB31 Switchboxes Installation and Maintenance Instructions



- 1. General*
- 2. Installation*
- 3. Commissioning*
- 4. Maintenance*

---

# 1. General

---

## 1.1 Description

The RB range of actuator mounted switchboxes is suitable for use on most Spirax Sarco linear pneumatic actuators. Functions available include electromechanical switching and variable resistance feedback.

## 1.2 Actuator and associated fixing kit

The Spirax Sarco range of pneumatic actuators require fixing kits, which must be ordered separately.

Linear actuators	Fixing kit
PN3000, PN4000, PN5000 and PN6000 series	FK27

**Note:** RB switchboxes do not fit PN575\_ actuators.

## 1.3 Applications

### RB11 - Electromechanical switching

To provide an on/off electrical supply through single pole change over switches at any valve position.

### RB31 - Potentiometric feedback

To provide a feedback signal change of nominally 1000  $\Omega$  for the specified valve travel.

## 1.4 Technical data

	RB11	RB31
<b>Operation</b>	2 switches	0 - 1 000 $\Omega$ nominal resistance change
<b>Type</b>	V3 - SPDT	variable resistance
<b>Maximum rating</b>	10A at 250V - Resistive 6A at 250V - Inductive	0.25 W at 70°C
<b>Terminations / connections</b>	Klippon Mk3	Klippon Mk3
<b>IP rating</b>	IP65	IP65
<b>Ambient temperature limit</b>	-25 to +70°C	-25 to + 70°C

## 1.5 RB31 additional gear data

Travel	Number of teeth	
	Gear A	Gear B
20 mm linear	20	100
30 mm linear	25	84

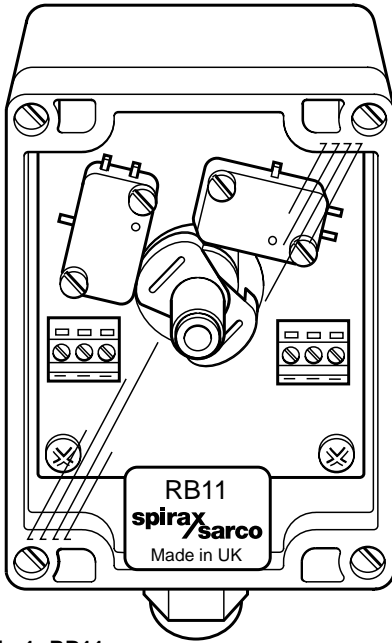


Fig 1 RB11

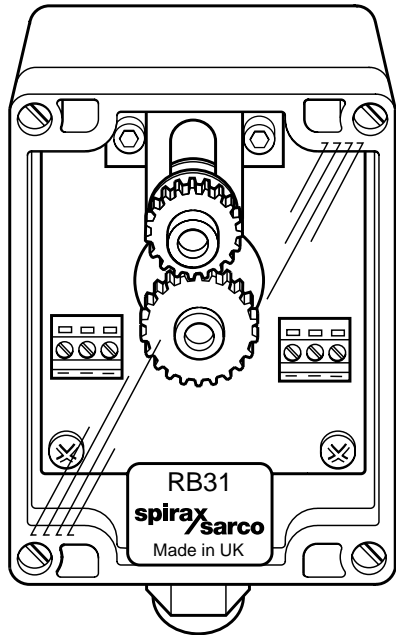


Fig 2 RB31

## 2. Installations

### 2.1 Switchbox mounting

Fig. 3 indicates the general layout.

Loosely fit the mounting plate (1) to the yoke or pillar that has no position indicators using the bolts provided (8 bolts are provided, 4 long bolts for yoke mounting and 4 short bolts for pillar mounting). Refer to Fig. 3 and Fig. 4 for the correct orientation. Remove the transparent cover from the switchbox and attach the switchbox to the mounting plate (1) as shown.

For RB11, locate the lever arm (2a) onto the switchbox drive shaft as shown in Fig. 4 and lock in place with the lever lock (3).

For RB31 lever arm is supplied fitted and retained with a nut.

Attach link in arm (2b) to the actuator spindle connector (4) ensuring that the pin locates in the slot of the lever arm (2a). See Fig. 3.

Position assembly so that the lever will be approximately horizontal when valve is at mid-travel. Tighten all bolts.

Fig. 3 Yoke mounted

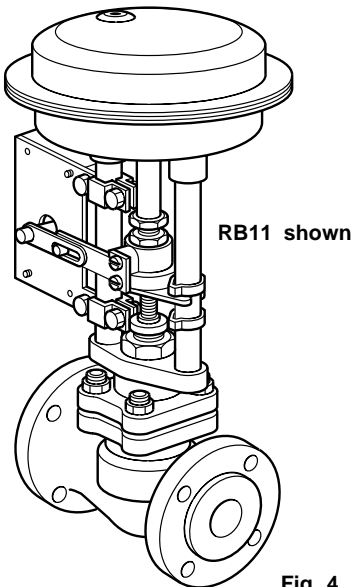
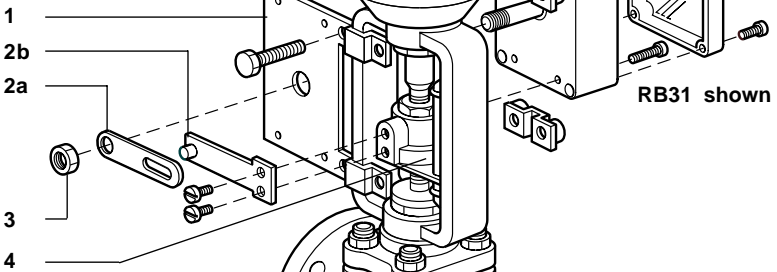


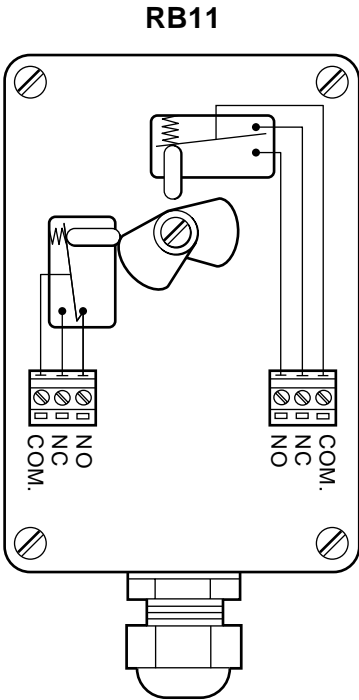
Fig. 4 Pillar mounted

#### FK27 Fixing kit

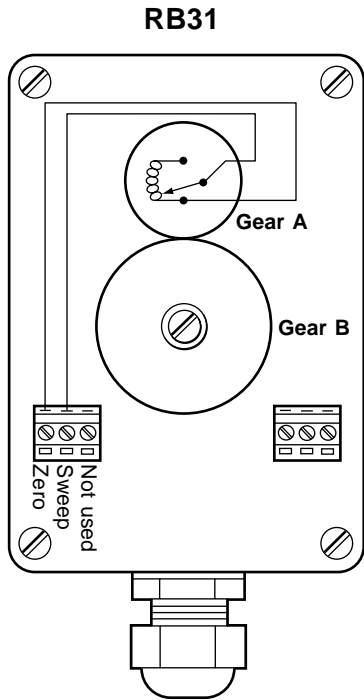
- |                                  |
|----------------------------------|
| 1 off Mounting plate assembly    |
| 1 off Allen cap bolt             |
| * 1 off Lever arm                |
| 1 off Lever lock                 |
| 1 off Link arm                   |
| 4 off Long bolts (yoke mount)    |
| 4 off Short bolts (pillar mount) |
| 1 off Link arm                   |

\* **Note:** RB31 supplied with lever arm and lever lock-nut, discard spares.

## 2.2 Air and electrical connections



**Fig. 5** Cable entry



**Fig. 6** Cable entry

### 3. Commissioning

#### RB11

The RB11 switchbox has internally adjustable cams which can be set to operate in any position through the control valves travel. The cams are individually set as follows:

- Each cam is held in place by screw tension and can be rotated to the desired position using a small screwdriver.
- Undo cam spindle screw (Fig. 7).
- Rotate cams to required positions, retighten cam spindle screw.

**Note:- Do not use force whilst adjusting as damage to the cam assembly may result.**

#### RB31

To set the RB31, first ensure the gears are fitted for the length of travel. See Section 1.5 - 'RB31 additional gear data'.

- With the RB31 drive shaft locking screw still loose, rotate gear **A** so that gear **B** comes to a stop at the end of travel allowing rotation of gear **B** in the opposite direction to rotation of drive shaft.
- Lock drive shaft locking screw and ensure rotation of **B** is achieved when actuator rotates (Fig. 8).

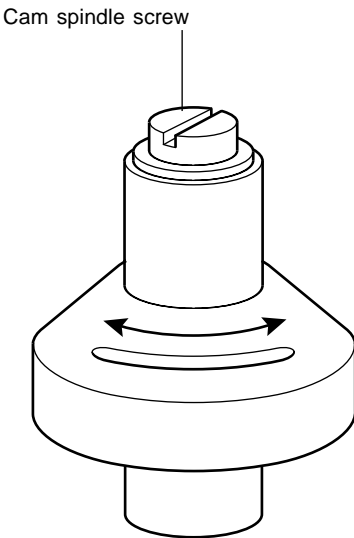


Fig. 7

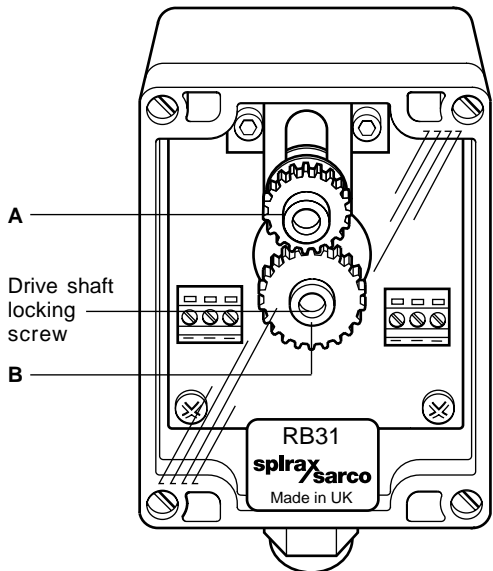


Fig. 8

---

## 4. Maintenance

---

### Available spares

<b>RB11</b>	V3 microswitch
	Baseplate c/w V3 microswitches and terminal strips
<b>RB31</b>	Potentiometer
	Baseplate c/w potentiometer and terminal strips

---

