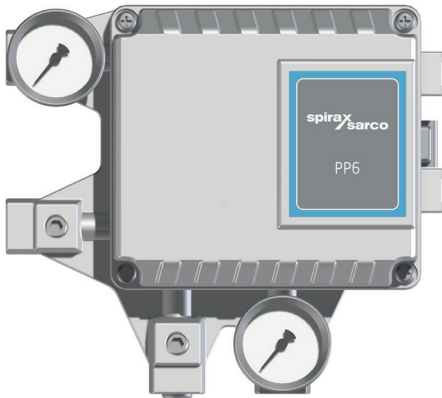


## PP6 Pneumatic Positioner

### Installation and Maintenance Instructions

---



1. Safety information
2. General product information
3. Installation
4. Commissioning
5. Maintenance
6. Spare parts
7. Fault finding
8. Approvals

# 1. Safety information

Safe operation of these products can only be guaranteed if they are properly installed, commissioned, used and maintained by qualified personnel (see Section 1.13) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.



**WARNING:** The maximum process fluid temperature must be suitable for use if the unit is to be used in any potential explosive atmosphere. For the device maintenance in a potentially explosive atmosphere, we recommend the usage of tools which do not produce and/or propagate sparks.

## Note: Use of the positioner in a hazardous area.



- The positioner must be suitably earthed to prevent static electricity
- Operation with air hotter than 70 °C is to be avoided
- The positioner must not be used in a Zone 0 area.
- Only wipe the positioner with a damp cloth to prevent static build up.

## 1.2 Intended use

Referring to the Installation and Maintenance Instructions, product markings and Technical Information Sheet, check that the product is suitable for the intended use/application. These products comply with the requirements of the Directive 2014/34/EU (ATEX) for the use of equipments in potentially explosive atmospheres.

## 1.3 Access

Ensure safe access and if necessary a safe working platform (suitably guarded) before attempting to work on the product. Arrange suitable lifting gear if required.

## 1.4 Lighting

Ensure adequate lighting, particularly where detailed or intricate work is required.

## 1.5 Hazardous liquids or gases in the pipeline

Consider what is in the pipeline or what may have been in the pipeline at some previous time. Consider: flammable materials, substances hazardous to health, extremes of temperature.

## 1.6 Hazardous environment around the product

Consider: explosion risk areas, lack of oxygen (e.g. tanks, pits), dangerous gases, extremes of temperature, hot surfaces, fire hazard (e.g. during welding), excessive noise, moving machinery. The positioner is suitable for installation in Zone 1 or Zone 2 ( Gas ). The positioner shall not be used in zone 0.

## 1.7 The system

Consider the effect on the complete system of the work proposed. Will any proposed action (e.g. closing isolation valves, electrical isolation) put any other part of the system or any personnel at risk?

Dangers might include isolation of vents or protective devices or the rendering ineffective of controls or alarms. Ensure isolation valves are opened and closed progressively to avoid system shocks.

## 1.8 Pressure systems

Ensure that any pressure is isolated and safely vented to atmospheric pressure. Consider double isolation (double block and bleed) and the locking or labelling of closed valves. Do not assume that the system has depressurised even when the pressure gauge indicates zero.

## 1.9 Temperature

Allow time for temperature to normalise after isolation to avoid the danger of burns.

## 1.10 Tools and consumables

Before starting work ensure that you have suitable tools and/or consumables available. Use only genuine Spirax Sarco replacement parts.

## 1.11 Protective clothing

Consider whether you and/or others in the vicinity require any protective clothing to protect against the hazards of, for example, chemicals, high /low temperature, radiation, noise, falling objects, and dangers to eyes and face.



Operators must wear ear protection when commissioning the positioner

## 1.12 Permits to work

All work must be carried out or be supervised by a suitably competent person. Installation and operating personnel should be trained in the correct use of the product according to the Installation and Maintenance Instructions.

Where a formal 'permit to work' system is in force it must be complied with. Where there is no such system, it is recommended that a responsible person should know what work is going on and, where necessary, arrange to have an assistant whose primary responsibility is safety.

Post 'warning notices' if necessary.

## 1.13 Handling

Manual handling of large and/or heavy products may present a risk of injury. Lifting, pushing, pulling, carrying or supporting a load by bodily force can cause injury particularly to the back. You are advised to assess the risks taking into account the task, the individual, the load and the working environment and use the appropriate handling method depending on the circumstances of the work being carried out.

## 1.14 Residual hazards

In normal use the external surface of the product may be hot. Many products are not self-draining. Take due care when removing the product from an installation (refer to 'Maintenance instructions').

## 1.15 Freezing

Provision must be made to protect products which are not self-draining against frost damage in environments where they may be exposed to temperatures below freezing point.

## 1.16 Disposal

Unless otherwise stated in the Installation and Maintenance Instructions, this product is recyclable and no ecological hazard is anticipated with its disposal providing due care is taken.

## 1.17 Returning products

Customers and stockists are reminded that under EC Health, Safety and Environment Law, when returning products to Spirax Sarco they must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk. This information must be provided in writing including Health and Safety data sheets relating to any substances identified as hazardous or potentially hazardous.

## Product return procedure

Please provide the following information with any equipment being returned:

1. Your name, Company name, address and telephone number, order number and invoice and return delivery address.
2. Description of equipment being returned.
3. Description of the fault.
4. If the equipment is being returned under warranty, please indicate:
  - i. Date of purchase
  - ii. Original order number
  - iii. Serial number

**Please return all items to your local Spirax Sarco branch.**

Please ensure all items are suitably packed for transit (preferably in the original cartons).

## 2. General product information

### 2.1 Introduction

The PP6 is a pneumatic positioner requiring a 0.2 to 1 bar control signal, and is designed for use with linear and rotary pneumatic valve actuators. The positioner compares the pneumatic signal from a controller with the actual valve position and varies a pneumatic output signal to the actuator accordingly. A mounting kit is supplied to suit all pneumatic actuators compliant with the NAMUR standard.

### 2.2 Label description

- |                                |  |
|--------------------------------|--|
| - <b>Model</b>                 | Indicates the model number and additional symbols.               |
| - <b>Ingress protection</b>    | Indicates enclosure protection grade.                            |
| - <b>Input signal</b>          | Indicates input signal range.                                    |
| - <b>Operating temperature</b> | Indicates the allowable operating temperature.                   |
| - <b>Ambient temperature</b>   | Indicates the allowable ambient temperature for explosion proof. |
| - <b>Supply pressure</b>       | Indicates the supply pressure range.                             |
| - <b>Serial number</b>         | Indicates unique serial number.                                  |
| - <b>Year. Month</b>           | Indicates manufactured year and month.                           |

## 2.3 Operating principle

### 2.3.1 Linear positioner

When INPUT SIGNAL PRESSURE increases to open the valve, ① the bellows stretches and pushes ② the flapper to the opposite side of ③ the nozzle.

The gap between ③ the nozzle and ② the flapper becomes wider and from inner part of ④ the pilot, air inside ⑨ the chamber is exhausted through ③ the nozzle.

Due to this effect ⑤ the spool moves to the right.

Then, ⑦ the seat which was blocked by ⑧ the poppet pushes the poppet away and supplied pressure (air) goes through ⑦ the seat and OUT1 Port and enters into ⑩ the chamber of the actuator.

Then ⑩ chamber's pressure will increase and when there is enough pressure inside the chamber to push ⑪ the actuator's spring, ⑫ actuator's stem will start to go down and through the feedback lever, stem's linear motion will be converted to ⑭ span lever's rotary motion.

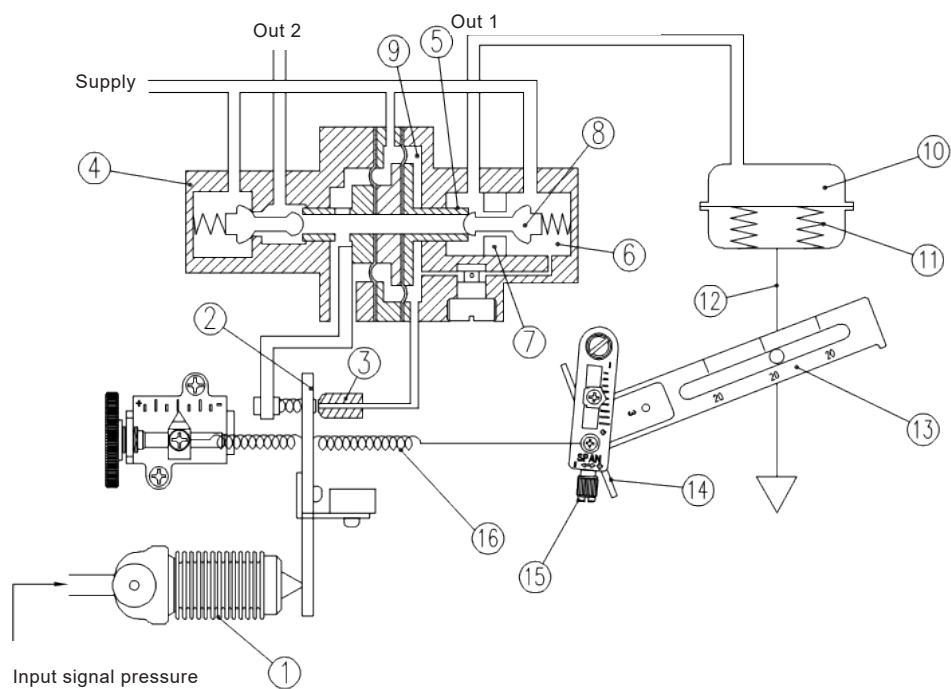
This ⑭ span lever's rotary motion will then once again rotate ⑮ the span and pulls the spring.

When the valve's position reaches to given input signal pressure, ⑯ span spring's pulling force and force of ① bellows will be balanced and move ② the flapper back its original position to reduce the gap between ③ the nozzle.

The amount of air being exhausted through ③ the nozzle will reduce and ⑨ the chamber pressure will increase again.

⑤ Spool will move back to its original position on the left and ⑧ the poppet will also move in same direction blocking ⑦ the seat to stop the air coming into the ⑩ chamber through the SUPPLY.

As a result, the actuator will stop operating and the positioner will return to its normal condition.



**Fig. 2 Linear positioner with an actuator**

### 2.3.2 Rotary positioner

When INPUT SIGNAL PRESSURE increases to open the valve, the bellows stretches and pushes ② the flapper to the opposite side of ③ the nozzle.

The gap between ③ the nozzle and ② the flapper becomes wider and from inner part of ④ the pilot, air inside ⑨ the chamber is exhausted through ③ the nozzle.

Due to this effect ⑤ the spool moves to the right.

**Then,** ⑦ the seat which was blocked by the poppet pushes ⑧ the poppet away and supplied pressure (air) goes through ⑦ the seat and OUT1 Port and enters into ⑩ the chamber of the actuator through OUT1.

Then ⑩ chamber's OUT1 pressure will increase and ⑪ the actuator's stem will rotate and through ⑫ the feedback shaft, actuator's rotating motion will be transferred to ⑬ the cam.

This motion will then rotate ⑭ the span lever and pull ⑮ the span's spring.

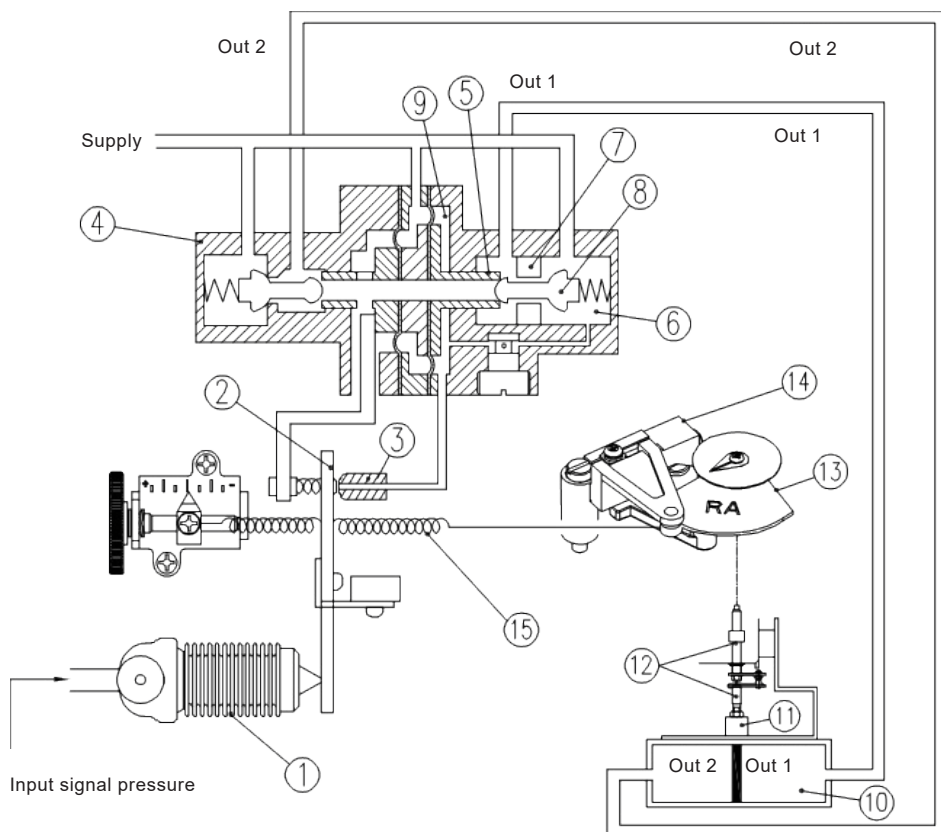
Once it reaches to given input signal, ⑮ span spring's pulling force and force of ① bellows will be balanced and move ② the flapper back its original position to reduce the gap between ③ the nozzle.

The amount of air being exhausted through ③ the nozzle will reduce and ⑨ chamber pressure will increase again.

⑤ Spool will move back to its original position on the left and ⑧ the poppet will also move in same direction blocking ⑦ the seat to stop the air coming into the ⑩ chamber through the SUPPLY.

As a result, the actuator will stop operating and the positioner will return to its normal condition.





- |                  |                            |
|------------------|----------------------------|
| 1 Torque motor   | 9 Chamber                  |
| 2 Flapper        | 10 Chamber of the actuator |
| 3 Nozzle         | 11 Actuator spring         |
| 4 Pilot          | 12 Actuator stem           |
| 5 Spool          | 13 Cam                     |
| 6 Supply chamber | 14 Span lever              |
| 7 Seat           | 15 Span spring             |
| 8 Poppet         | 16 Zero adjuster           |

**Fig. 3 Rotary positioner with an actuator**

# 3. Installation

**Note:** Before starting any installation observe the 'Safety information' in Section 1.

This document is provided as a guide and it is recommended that it is read thoroughly prior to installation. Also refer to the separate Installation and Maintenance Instructions for the control valve and actuator.

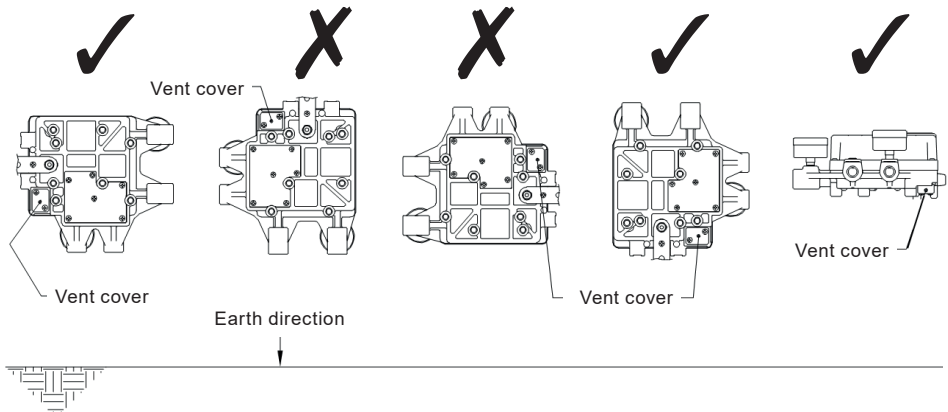
## 3.1 Safety

When installing a positioner, please ensure to read and follow safety instructions.



- Any input or supply pressures to valve, actuator, and / or to other related devices must be turned off.
- Use bypass valve or other supportive equipment to avoid entire system "shut down".
- Ensure there is no remaining pressure in the actuator.
- The positioner has a vent cover to exhaust internal air and drain internal condensation water.

When installing the positioner, make sure the vent cover is facing downwards. Otherwise, the condensation water could cause corrosion and damage to internal parts.



**Fig. 4 The correct positions of a vent cover**

### 3.2 Location

The positioner should be mounted in sufficient space to allow opening of the cover and provide access to connections. When fitting to an actuator, ensure the positioner will not be exposed to an ambient temperature outside the range -20 °C to +70 °C. The positioner enclosure is rated to IP66. Connection of air supply pressure (1.4 to 7 bar g) and control signal (0.2 to 1.0 bar) should be considered prior to choice of location.

### 3.3 Tools for installation

- Hex key set for hex socket cap bolts
- (+) and (-) Screw drivers
- Spanners for hexagonal-head bolts

### 3.4 Linear positioner Installation

Linear positioner should be installed on linear motion valves such as globe or gate type which uses spring return type diaphragm or piston actuators.

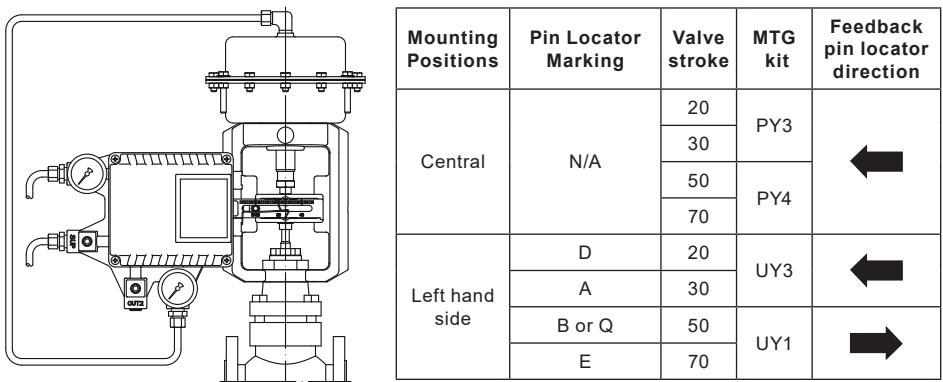


Fig. 5 Installation example

Before proceeding with the installation, ensure following components are available.

- Positioner
- Mounting kit
- Air supply pipe and couplings
- Signal pipe and couplings to actuator

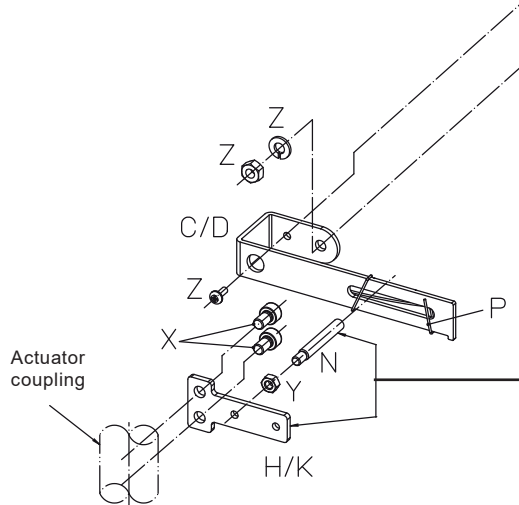
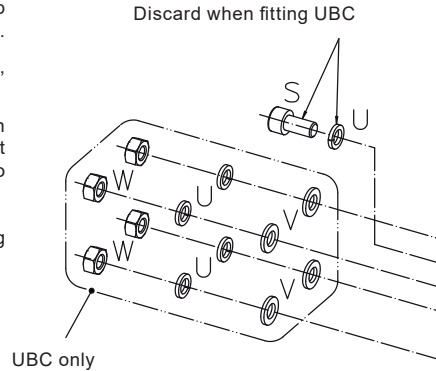
# 3.5 Installation Steps

## 3.5.1 Central mount

1. Assemble feedback lever to positioner, retaining with screw and M6 nut.
2. Assemble mounting bracket onto back of positioner, by feeding feedback lever through opening in bracket, retain using 4 off M8 screws and washers.
3. Assemble feedback pin to feedback pin locator and secure with nut. Secure feedback pin locator to actuator coupling with M6 cap screws, ensuring feedback pin is to the left of actuator centre line.
4. Connect air supply to actuator to position valve to mid travel, see Fig. 9
5. Assemble positioner onto actuator, ensuring feedback pin engages with feedback lever and tensioning spring is the correct side of feedback pin, see Fig. 8. Move positioner up or down, so that feedback lever is horizontal.

Secure mounting bracket to actuator yoke using M8 screw and spring washer (or 'U' bolts if applicable).

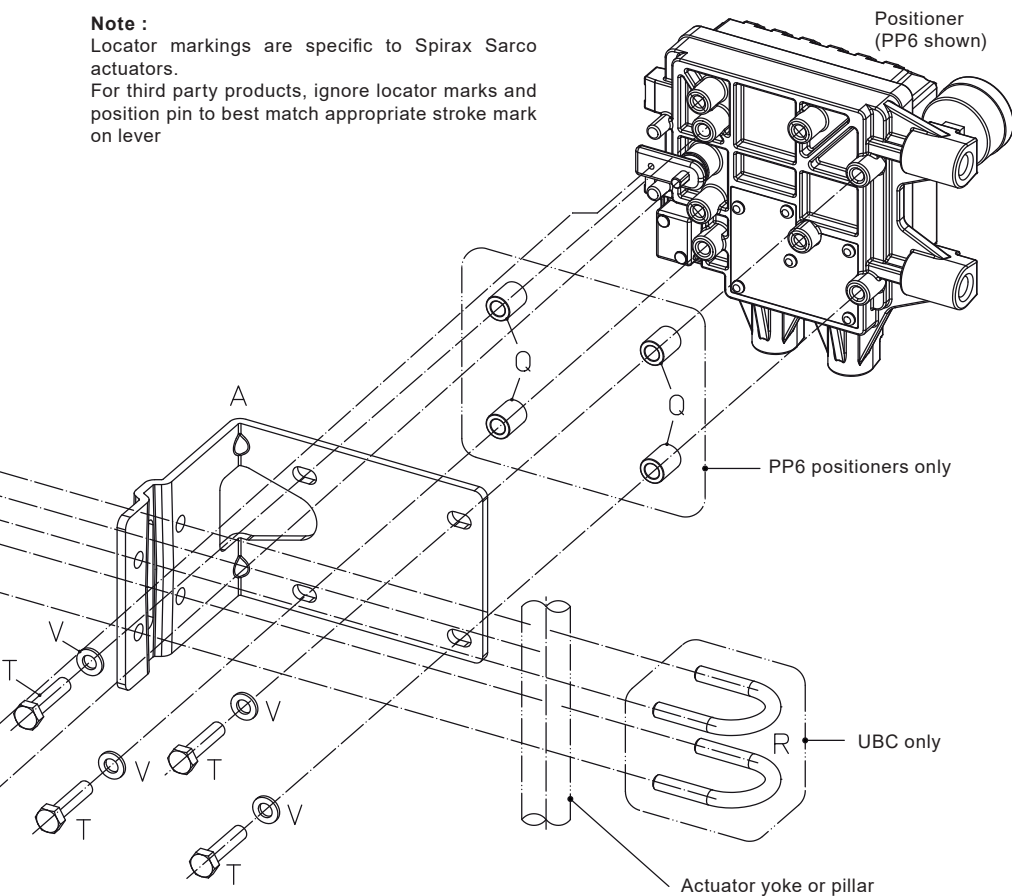
Hardware identification		
A	Bracket	
C	Lever 20-30	EY3/PY3 only
D	Lever 50-80	EY4/PY4 only
H	Locator 20-30	EY3/PY3 only
K	Locator 50-70	EY4/PY4 only
N	Pin	
P	Spring	
Q	Spacer	PY3/PY4 only
R	U-bolt	UBC only
S	M8 cap head screw	
T	M8 hex head screw	
U	M8 spring washer	
V	M8 plain washer	
W	M8 nut	
X	M6 cap head screw	
Y	M5 nut	
Z	Nut, spring washer and screw supplied with EP6/PP6 positioner	



**Note :**

Locator markings are specific to Spirax Sarco actuators.

For third party products, ignore locator marks and position pin to best match appropriate stroke mark on lever



Fit pin into relevant hole according to stroke 20, 30, 50 or 70 (observe markings on front face, noting that locator 'K' has alternate positions for 50 stroke valves : use P50 for actuators with pillars and Y50 for actuators with a yoke)

**Fig. 6 Exploded view of central mount assembly  
(PP6 positioner shown, for EP6 spacers are not required)**

### 3.5.2 Side mount

1. Assemble feedback lever to positioner, retaining with screw and M6 nut.
2. Assemble mounting bracket onto back of positioner, retain using 4 off M8 screws and washers.
3. Assemble feedback pin to feedback pin locator, and secure with nut. Secure feedback pin locator to actuator coupling with M6 cap screws, ensuring feedback pin locator is positioned according to feedback pin locator table.
4. Connect air supply to actuator to position valve to mid travel, see Fig. 9
5. Assemble positioner onto actuator, ensuring feedback pin engages with feedback lever and tensioning spring is the correct side of feedback pin, see Fig. 8. Move positioner up or down, so that feedback lever is horizontal.

Secure mounting bracket to actuator yoke using M8 screw and spring washer (or 'U' bolts if applicable).

Hardware identification		
B	Bracket	
E	Lever 10-40	UY3 only
F	Lever 30-70	UY1 only
G	Lever 60-100	UY2/UY4 only
J	Locator 65-70-75	UY2 only
L	Locator slotted	UY1/UY2/UY3
N	Pin	
P	Spring	
R	U-bolt	UBC only

Hardware identification	
S	M8 cap head screw
T	M8 hex head screw
U	M8 spring washer
V	M8 plain washer
W	M8 nut
X	M6 cap head screw
Y	M5 nut
Z	Nut, spring washer and screw supplied with EP6/PP6 positioner

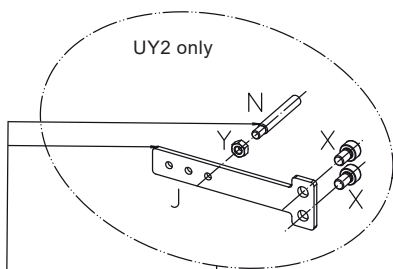
Slotted locator alignment (UY1/UY3/UY4)									
Valve >		C series		QL			Spira-trol		
				DN15-DN100	DN125-DN200		DN15-DN100	DN125-DN300	
Stroke (mm)		38	50	20	30	50	20	30	70
Actuator	PN1600	A~R	C~R						
	PN3000			D~L	A~L		D~L	A~L	
	PN4000			D~L	A~L		D~L	A~L	
	PN5000			D~L	A~L	Q~R	D~L	A~L	
	PN6000			D~L	A~L	Q~R	D~L	A~L	
	PN9100			D~L	A~L		D~L	A~L	
	PN9200			D~L	A~L		D~L	A~L	
	PN9300			D~L	A~L		D~L*	A~L	
	PN9400					B~R			E~R
	TN2200					B~R			E~R
	TN2300					B~R			E~R
	TN2400					B~R			E~R

A, B, C, D, Q, E = cap screw markers

L = left, R = right

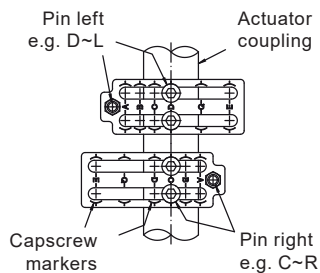
< \* Example : PN9300 actuator with 20 mm stroke, DN100 Spira-trol valve = 'D~L' i.e capscrews aligned with 'D' markers and pin to left of centre (see Figure 1)

^  
\*



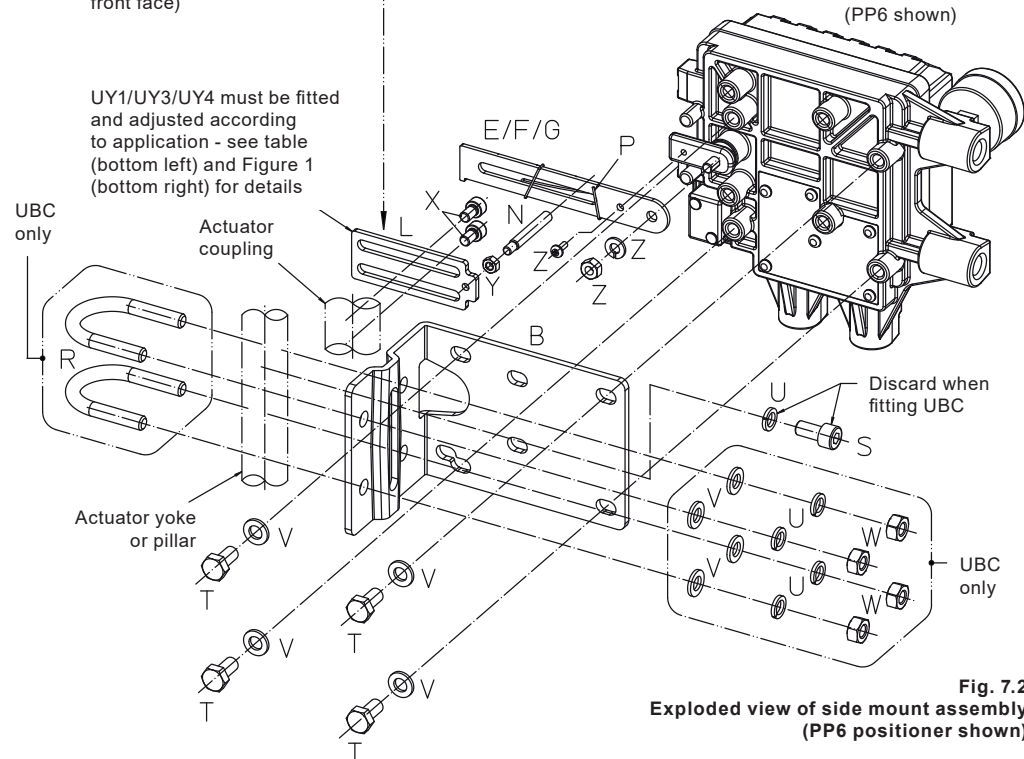
Fit pin into relevant hole according to stroke 65, 70 or 75 (observe markings on front face)

UY1/UY3/UY4 must be fitted and adjusted according to application - see table (bottom left) and Figure 1 (bottom right) for details



**Fig 7.1**

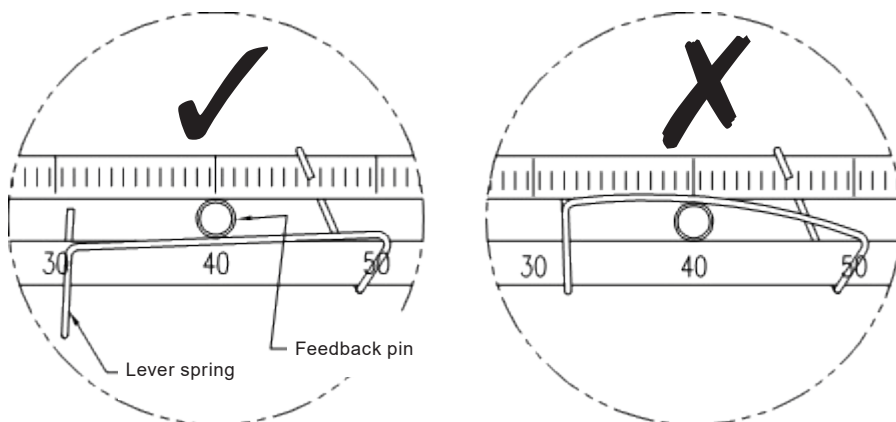
Positioner  
(PP6 shown)



**Fig. 7.2**  
**Exploded view of side mount assembly**  
**(PP6 positioner shown)**

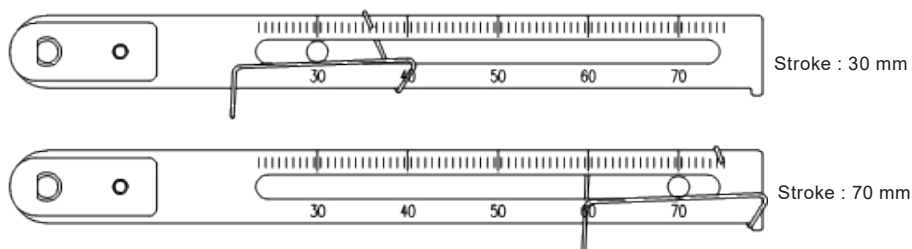
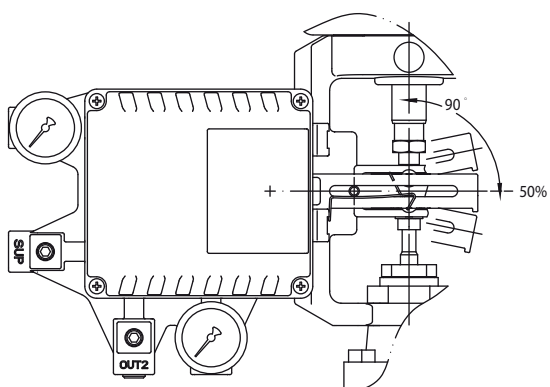
**Note :**

Locator markings are specific to Spirax Sarco actuators. For third party products, ignore locator marks and position pin to best match appropriate stroke mark on lever



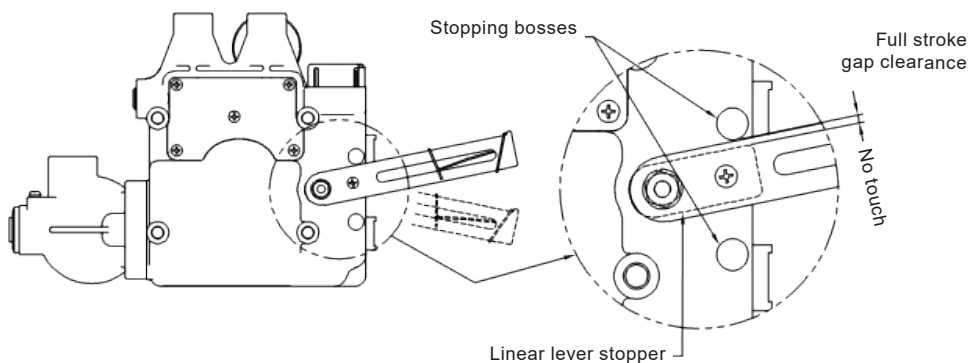
**Fig. 8 Proper way to insert feedback pin between feedback lever and lever spring**

**Fig. 9 Feedback lever and valve stem**



**Fig. 10 Feedback lever and location of the feedback pin**





**Fig. 11**

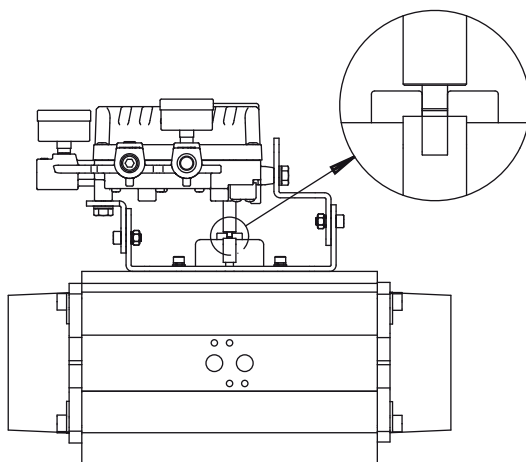
Linear lever stopper should not touch stopping bosses of positioner on 0% ~ 100% valve stroke.

### 3.6 Rotary positioner Installation

Rotary positioner should be installed on rotary motion valve such as ball or butterfly type which uses rack and pinion, scotch yoke or other type of actuators which its stem rotates 90 degrees. Before proceeding with the installation, ensure following components are available.

#### Components

- Positioner
- Rotary bracket set (2 pieces)
- Mounting kit
- Air supply pipe and couplings
- Signal pipe and couplings to actuator



**Fig. 12 Namur type**

### 3.7 Rotary Bracket Information

The rotary bracket set (included with the positioner) contains two components. The bracket is designed to fit onto the actuator with 20 mm, 30 mm and 50 mm stem height (H) according to VDI/VDE 3845 standard. Please refer to below figures how to adjust the height of the bracket.

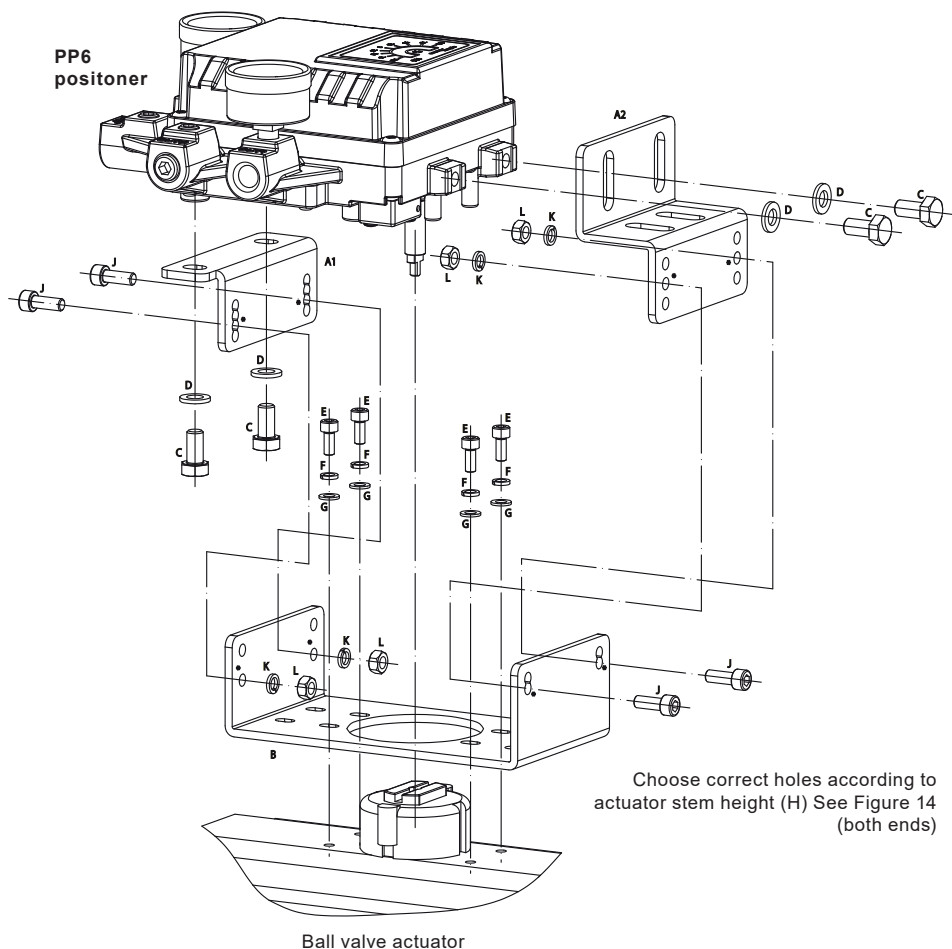
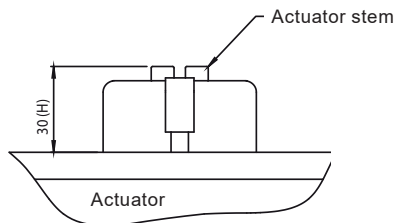


Fig. 13 Positioner and mounting kit

#### Hardware identification

<b>A</b>	Bracket (positioner)	1 off
<b>B</b>	Bracket (actuator)	
<b>C</b>	M8 hex head screw	4 off
<b>D</b>	M8 plain washer	
<b>E</b>	M5 cap head screw	
<b>F</b>	M5 spring washer	
<b>G</b>	M5 plain washer	
<b>J</b>	M6 cap head screw	
<b>K</b>	M6 spring washer	
<b>L</b>	M6 nut	



**Fig. 14 Actuator stem Height**

### 3.8 Rotary positioner Installation Steps

1. Spirax actuator (BVA300) stem height is 30mm, assemble brackets as shown in Fig. 13
2. Please note, set rotation position of the actuator stem as shown in Fig. 13 when assembling, especially important for double acting actuators.

## 3.9 Connecting up

### 3.9.1 Pneumatic connections

**Warning:** Air supply must be dry, oil and dust free to ISO 8573-1:2010 Class 3:3:2. Dirty air supply may damage the product and invalidate warranty.

For best performance, set the air supply pressure to about 0.5 bar g above the pressure required to fully travel the actuator.

Check all connections for leaks. Please note however that the PP6 bleeds air in normal operation at a rate of approximately 2.5 LPM at 1.4 bar supply pressure.

#### Signal

Pneumatic connections are located at the left hand side and bottom of the positioner and are identified as follows 'SUPPLY' and 'OUT':

SIGNAL - Air signal 0.2 to 1.0 bar

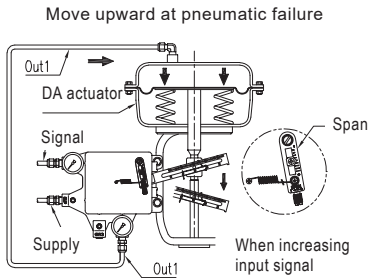
SUPPLY - Air supply - 1.4 bar g to 7 bar g, depending upon required actuator spring range.

OUT - Output signal to the actuator.

Connections are 1/4" NPT female. Interconnection between the positioner and the actuator should be at least 6 mm OD tube.

### 3.9.2 Air connection - Single acting actuator (Side mount positioner)

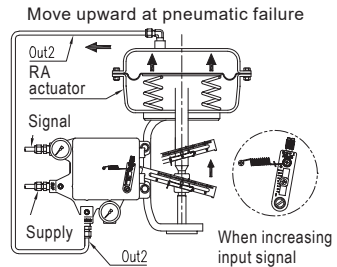
#### 3.9.2.1 - Piping and span direction setting for linear DA single actuator



#### Direct action

##### Note:

For central mount, reverse Span lever

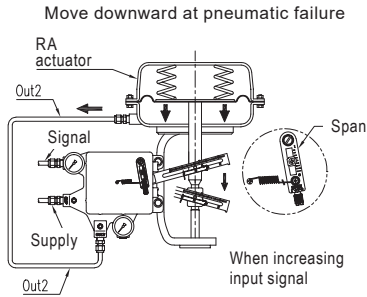


#### Reverse action

##### Note:

For central mount reverse the Span lever

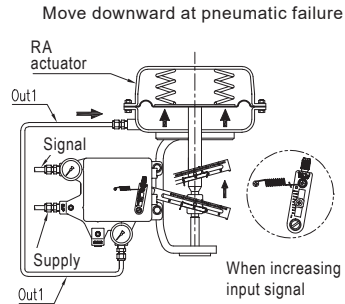
3.9.2.2 - Piping and span direction setting for linear RA single actuator



**Direct action**

**Note:**

**For central mount reverse the Span lever**

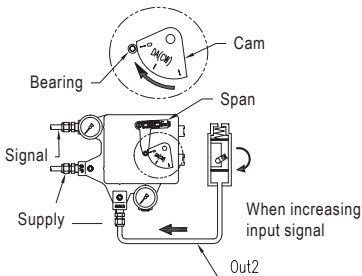


**Reverse action**

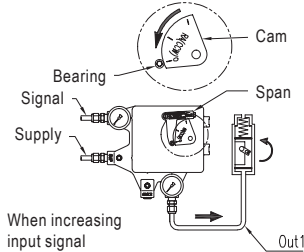
**Note:**

**For central mount reverse the Span lever**

3.9.2.3 - Piping and cam direction setting for rotary single actuator



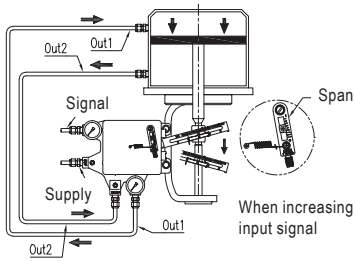
**Direct action**



**Reverse action**

### 3.9.3 Double acting actuator (side mount positioner)

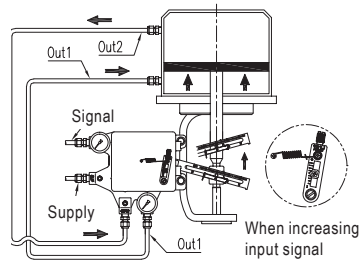
#### 3.9.3.1 Piping and cam direction setting for linear double actuator



**Direct action**

**Note:**

**For central mount reverse the Span lever**

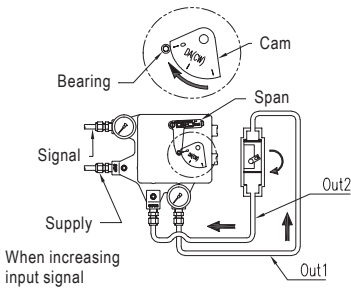


**Reverse action**

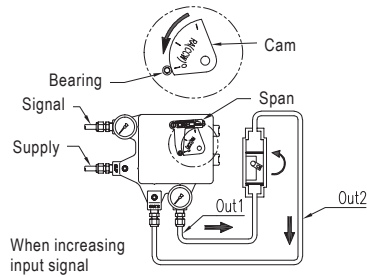
**Note:**

**For central mount reverse the Span lever**

#### 3.9.3.2 Piping and cam direction setting for rotary double actuator



**Direct action**



**Reverse action**

### 3.9.4 Pneumatic connections

The PP6 only requires a 0.2 to 1.0 bar signal.

## 4. Commissioning



Operators must wear ear protection when commissioning the positioner

### 4.1 General

- Positioner uses 1.4 - 7 bar g air supply
- Positioner should be grounded if being used in a hazardous area

# 4.2 RA or DA Setting

## 4.2.1 Linear Positioner

- 1. Side mount - If the actuator axis moves down when input signal is increased, assemble the "Span" to upper M6 Tap hole like the below Fig. 15.(DA)

Central mount - If the actuator axis moves down when input signal is increased, assemble the "Span" to lower M6 Tap hole like the below Fig. 17. (DA)

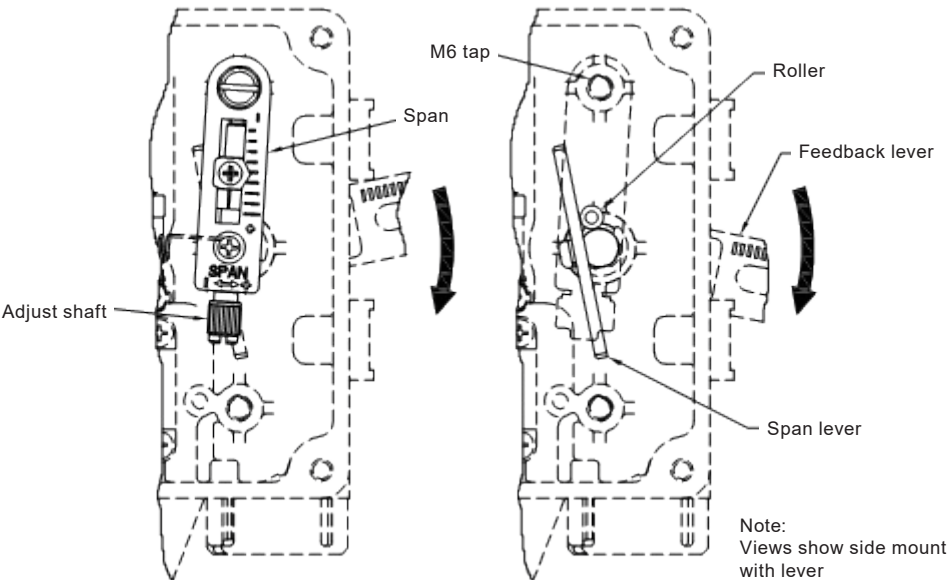


Fig. 15 Span Installation (side = DA, central = RA)

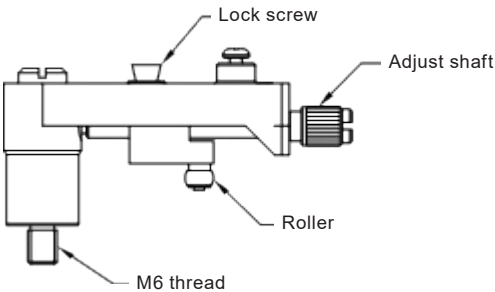


Fig. 16 Linear span assembly



2. Side mount - If the actuator axis moves up when input signal is increased, assemble the "Span" to lower M6 Tap hole like the below Fig. 17.(RA)

Central mount - If the actuator axis moves up when input signal is increased, assemble the "Span" to upper M6 Tap hole like the above Fig. 15 (RA)

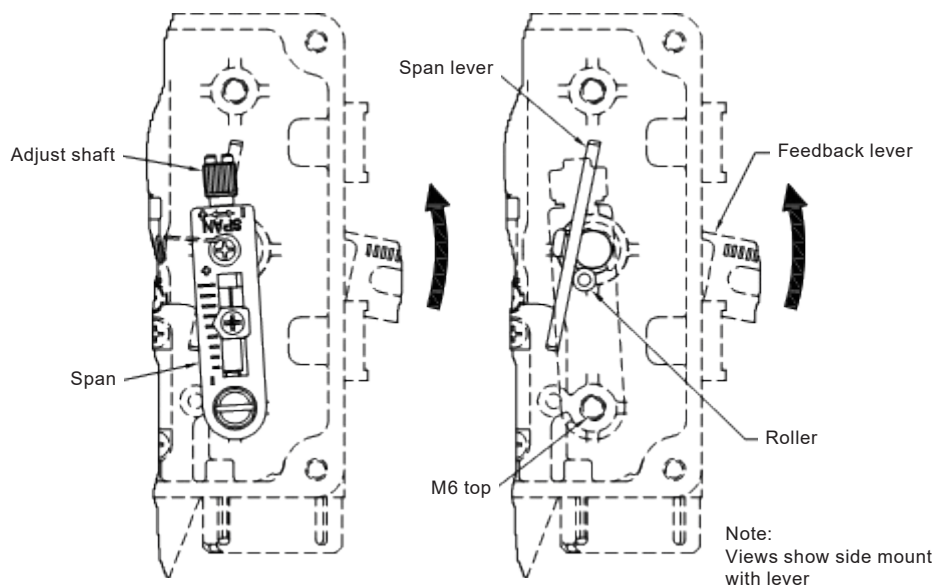
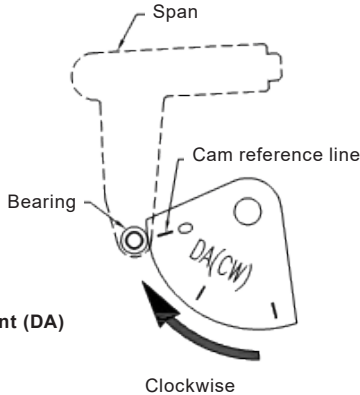


Fig. 17 Span Installation (side = RA, central = DA)

## 4.3 Rotary positioner

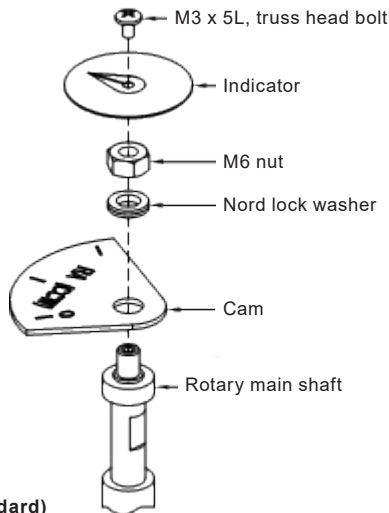
1. If the actuator axis rotates clockwise when input signal is increased, If required, re-assemble the CAM so that "DA(Direct Acting)" lettered surface is facing upward.
2. If the actuator axis rotates counter-clockwise when input signal is increased, If required, re-assemble the CAM so that "RA(Reverse Acting)" lettered surface is facing upward.
3. Position the actuator to initial point.
4. Adjust the CAM so that the engraved CAM reference line marked with "0" is placed in the center of the span bearing and fix it by tightening the nut.



**Fig. 18**  
**Cam Installment (DA)**



**Fig. 19 Cam Installment (RA)**



**Fig. 20**  
**Parts (Standard)**

## 4.4 Adjustment - Zero Point

Set input signal at 0.2 bar (or 1 bar) as the initial control signal and rotate the adjuster of zero unit handle upward or downward to adjust actuator's zero point. Please refer to the below figure to increase or decrease the zero point.

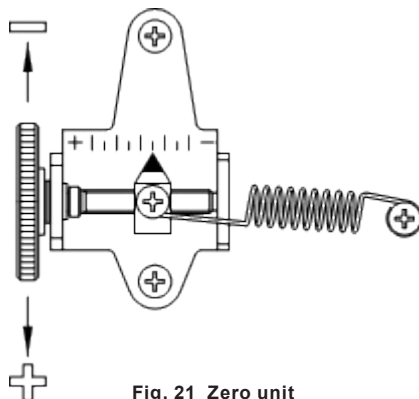


Fig. 21 Zero unit

## 4.5 Adjustment - Span

1. After setting zero point, supply input signal at 1 bar (or 0.2 bar) as the end control signal and check the actuator stroke. If the stroke is too low, the span should be increased. If the stroke is too high, the span should be decreased.
2. Changing span will affect zero point setting so zero point should be set again after span has been adjusted.
3. Above two steps are required several times until both zero and span are properly set.
4. After proper setting, tighten lock screw.

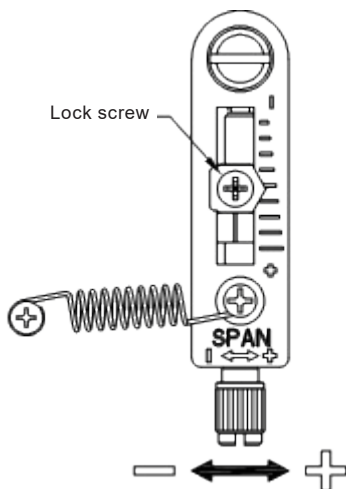


Fig. 22 Linear span unit

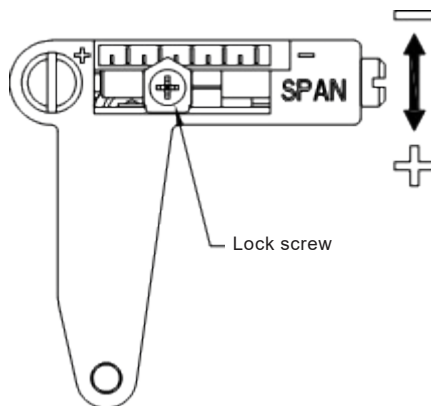


Fig. 23 Rotary span unit

## 4.6 Adjustment – A/M switch (Auto/Manual)

1. Auto/Manual switch is on the top of pilot unit. Auto/Manual switch allows the positioner to be by-passed. If the A/M switch is turned counter-clockwise (towards "M", Manual), then the supply pressure will be directly supplied from OUT1 port of positioner to the actuator regardless of input signal. On the other hand, if the switch is turned clockwise (toward "A", Auto) and it is fasten tightly, then the positioner will operate normally by input signal. It is extremely important to check the allowed pressure level of the actuator when the switch is loosened.
2. Check whether the supply pressure is too high.
3. After using "Manual" function, Auto/Manual switch should be returned to "Auto".

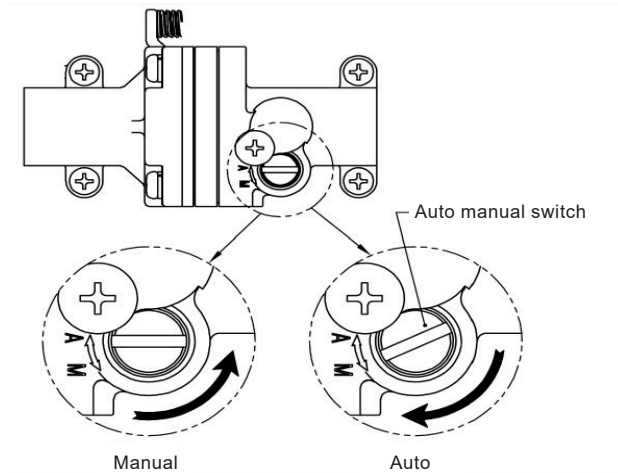


Fig. 24 A/M switch adjustment

## 5. Maintenance

### 5.1 Regular maintenance

1. Drain any build-up within the air supply filter set, as impurities such as oil, water and dirt will cause inconsistent operation.
2. Ensure air supply is at the correct pressure.
3. Make visual checks to ensure that the valve assembly is operating correctly.
4. Wipe the unit with a damp cloth or antistatic products

## 6. Spare parts

**There are no spares for the positioner**

## 7. Fault finding

Symptom	Remedy
<b>Positioner does not respond to the input signal.</b>	<ol style="list-style-type: none"> <li>1) Check supply pressure level. The level must be at least 1.4 bar. For spring-return type of actuator, the supply pressure level has to be larger than the spring's specification.</li> <li>2) Check if input signal is properly supplied to the positioner. The signal should be 0.2 - 1.0 bar g.</li> <li>3) Check if zero point or span point is properly set.</li> <li>4) Check if the positioner's nozzle has been blocked. Also, check if the pressure is supplied to the positioner and pressure is being exhausted through the nozzle. If the nozzle has been blocked by any substances, please send the product for repair.</li> <li>5) Check if feedback lever has been installed properly.</li> </ol>
<b>The pressure of OUT1 reaches Supply pressure level and does not come back down.</b>	<ol style="list-style-type: none"> <li>1) Check Auto/Manual switch. If the switch has been damaged, please contact local Spirax Sarco office, quoting serial number.</li> <li>2) Check for a gap or damages between the nozzle and the flapper. If damaged, please contact local Spirax Sarco office, quoting serial number..</li> </ol>
<b>The pressure is exhausted only by Auto manual switch.</b>	<ol style="list-style-type: none"> <li>1) Check if the positioner's nozzle has been blocked. Also, check if the pressure is supplied to the positioner and the pressure is being exhausted through the nozzle. If the nozzle has been blocked by any substances, please contact local Spirax Sarco office, quoting serial number.</li> </ol>
<b>Hunting occurs.</b>	<ol style="list-style-type: none"> <li>1) Check if stabilizing spring has been displaced. (Next to Pilot unit)</li> <li>2) Check if there is any friction between the valve and the actuator. If so, increase actuator's size or reduce the friction level.</li> </ol>
<b>The actuator moves only to full open and full close positions.</b>	<ol style="list-style-type: none"> <li>1) Check if Span or Cam of the positioner is installed correctly corresponding to direct or reverse acting of the actuator. If not, refer to section 4.3 or 4.4..</li> </ol>
<b>Linearity is too low.</b>	<ol style="list-style-type: none"> <li>1) Check if linear positioner is properly positioned. Especially check if the feedback lever is parallel to the ground at 50% point.</li> <li>2) Check if zero and span point have been properly adjusted. If either one of values is being adjusted, another one must be re-adjusted as well.</li> <li>3) Check if supply air pressure level is stable from the regulator. If the level is unstable, the regulator must be replaced.</li> </ol>
<b>Hysteresis is too low.</b>	<ol style="list-style-type: none"> <li>1) In case of double acting actuator, check if seat adjustment has been properly performed. Please contact Spirax Sarco for any further inquiries regarding the seat adjustment.</li> <li>2) Backlash can occur when the feedback lever and lever spring are loose. To avoid backlash, please adjust the lever spring.</li> <li>3) Check if the feedback pin to the feedback lever is tightly fastened.</li> </ol>

## 8. Approvals

### ATEX

Rating: II 2GD Ex h IIC Tb Gb  
Ex h IIIC T85°C Db

Ambient temperature: -20 ~ 70°C (-4 ~ 158°)

# 8.1 Declaration of Conformity

spiraxsarco.com



EU DECLARATION OF CONFORMITY

Apparatus model/Product: **Pneumatic Positioner  
PP6**

Name and address of the manufacturer or his  
authorised representative: **Spirax Sarco Ltd,**  
Runnings Road  
Cheltenham  
GL51 9NQ  
United Kingdom

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:


2014/34/EU     ATEX Directive

References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:

ATEX Directive     EN 1127-1:2019  
                              EN ISO 80079-36:2016  
                              EN ISO 80079-37:2016

Additional information:

ATEX coding:  II 2GD Ex h IIC T6 Gb  
                              Ex h IIIC T85°C Db

Signed for and on behalf of: **Spirax Sarco Ltd,**  
(signature): 

(name, function): **M Sadler**  
Steam Business Development Engineering  
Product Integrity & Compliance Manager

(place and date of issue): **Cheltenham**  
**2021-06-24**

GNP234-EU-C/03 issue 2 (EN)

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PP6 Pneumatic Positioner





# 8.1 Declaration of Conformity (continued)

spiraxsarco.com



## DECLARATION OF CONFORMITY

Apparatus model/Product: **Pneumatic Positioner  
PP6**

Name and address of the manufacturer or his  
authorised representative: **Spirax Sarco Ltd,**  
Runnings Road  
Cheltenham  
GL51 9NQ  
United Kingdom

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration described above is in conformity with the relevant statutory requirements of:

**SI 2016 No.1107 \*    The Equipment and Protective Systems Intended for Use in  
Potentially Explosive Atmospheres Regulations 2016**

(\*As amended by EU Exit Regulations)

References to the relevant designated standards used or references to the other technical specifications in relation to which  
conformity is declared:

**SI 2016 No.1107 \***    EN 1127-1:2019  
EN ISO 80079-36:2016  
EN ISO 80079-37:2016

Additional information:

Explosion proof coding:  II 2GD Ex h IIC T6 Gb  
Ex h IIIC T85°C Db

Signed for and on behalf of: **Spirax Sarco Ltd,**

(signature):

(name, function):

**M Sadler**  
Steam Business Development Engineering  
Product Integrity & Compliance Manager  
Cheltenham

(place and date of issue):

09 August 2021

**GNP234-UK-C/03 issue 1**

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**PP6 Pneumatic Positioner**







