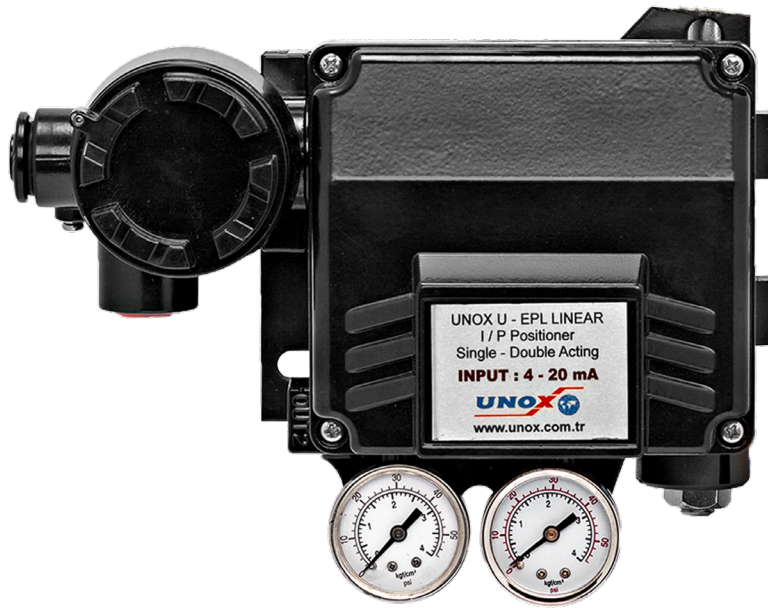


# PNEUMATIC ACTUATOR ACCESSORIES



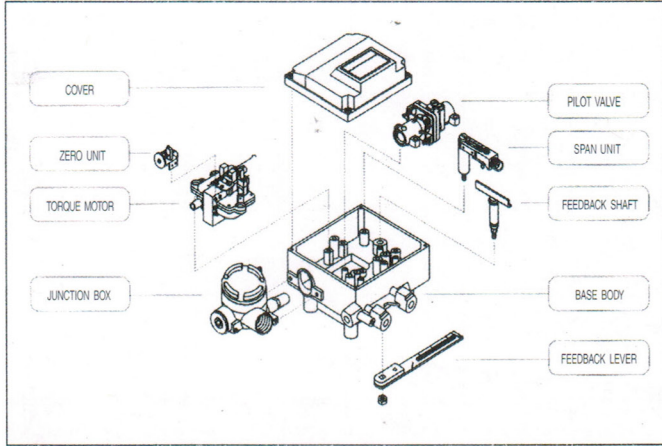
The positioner is the positioner that applies the air effect to see if the valve is in the correct position. This positioner is built on actuators. Positioners evaluate the control signal to the valves and send it to the common percentage of the valve.

# LINEER ELECTRO PNEUMATIC POSITIONER

## U-EPL SERIES

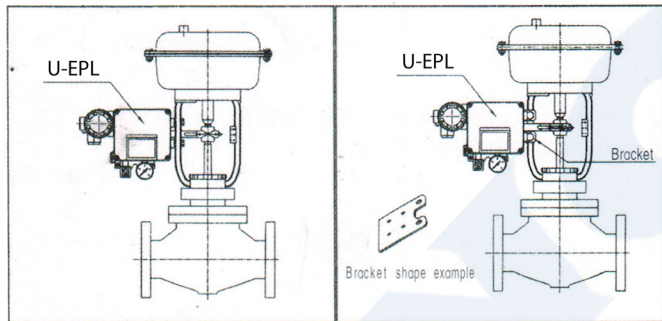
The electro-pneumatic positioner **U-EPL** is used for linear operation of pneumatic linear valve actuators by means of electrical controller or control systems with an analog output signal of 4 to 20 mA or split ranges.

### 1. STRUCTURE



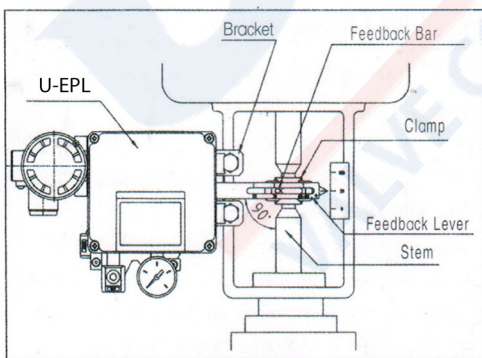
### 2. INSTALLATION

#### 2-1. Example of attaching to actuator



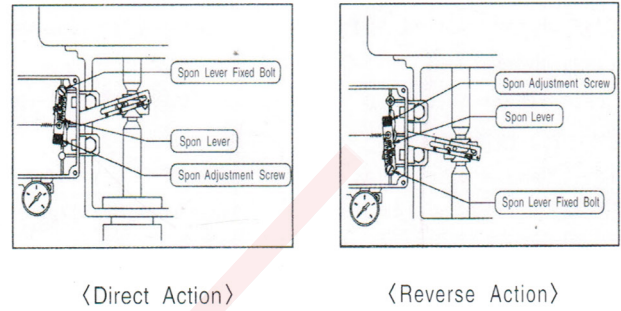
ex1) case of directly attaching ex2) case of using a bracket to diaphragm valve

#### 2-2. Connection with feedback Lever



- 1 Attach to the position that the valve stem and lever form the right angle when the input signal is 50%.
- 2 Attach to the position that the runout angle is within the range of 10° ~ 30°.

### 2-3 Direct Action & Reverse Action



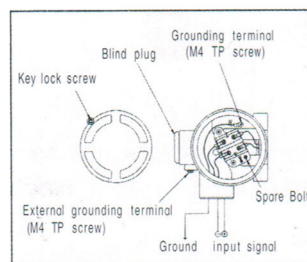
### 3. AIR PIPING CONNECTION

U-EPL			
DA Action		RA Action	
As the input current increases, Stem goes down. Actuator : DA Span : DA Connection : OUT 1		As the input current increases, Stem goes up. Actuator : DA Span : RA Connection : OUT 2	
As the input current increases, Stem goes down. Actuator : RA Span : DA Connection : OUT 2		As the input current increases, Stem goes up. Actuator : RA Span : RA Connection : OUT 1	
As the input current increases, Stem goes down. Actuator : Cylinder Span : DA		As the input current increases, Stem goes up. Actuator : Cylinder Span : RA	

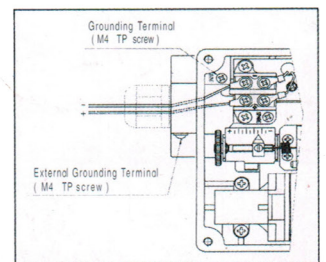
- 1 Fully purge the pipe from foreign matter.
- 2 Use a clean supply air fully removed humidity and dust.
- 3 Use **U-EPL** filter regulator to keep supply air pressure constantly.
- 4 When using the double acting type as the single acting type, blind either OUT1 or OUT2 and also remove the pressure gauge to close its connection.

### 4. ELECTRICAL WIRING

- 1 Connect the (+) and (-) output terminals from the regulator with the (+) and (-) input terminals, respectively, of the positioner Junction box.
- 2 For Explosion Proof, both pressure tight conduit thread connection type and pressure tight packing type are available.
  - ⊙ Use Cable Gland in pressure tight packing type. (Cable O.D. = 9.0 ~ 11).
  - ⊙ Use PF 1/2 (G 1/2) standard for conduit thread connection type.
- 3 Close Junction box cover and lock Key lock screw.
- 4 There is a SPare Bolt in terminal board.



Exdm IIC T6



Exia IIC T6



### 5. ADJUSTMENT

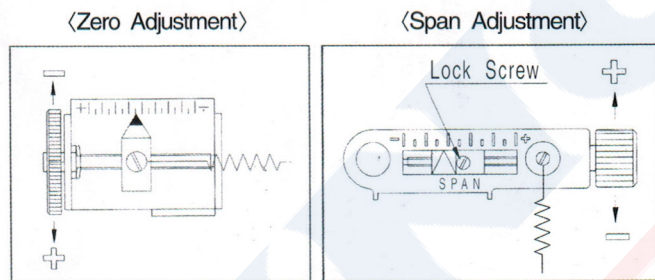
- ① Check the following prior to starting the adjustment.  
Check that the pipeline is correctly connected with the pressure supply port and OUT1 and OUT2 port.
- ② Check that the wires are correctly connected with the (+), (-) and grounding terminals.
- ③ Check that the actuator and positioner are sturdily connected.
- ④ Check for locking of the auto/manual-changeover screw of pilot valve (fully tightened in the clockwise direction).
- ⑤ Check that the span adjusting lever of internal feedback lever is attached to the correct (Direct or Reverse) position.
- ⑥ Check for correct use of the cam face (Direct or Reverse) and that flange nut is firmly locked.

#### 5-1 Zero Adjustment

- ① Set an signal to the Stroke starting signal(4mA) then turn the Zero Adjuster clockwise or counterclockwise.
- ② In case of Spring Actuator, check if it is set to standard pressure in Zero Point. If not, repeat Zero adjustment.

#### 5-2 Span Adjustment

- ① Adjust Range Adjustment so that an Actuator stops at 0% position of the Stroke by the 0% applied input signal and 100% position for 100% input signal respectively.
- ② Check Zero Point and repeat Zero Span Adjustment.  
1/2 Split Range can be used by Zero and Span Adjustment.
- ③ After Setting, tighten up Lock Screw of Span adjustment.



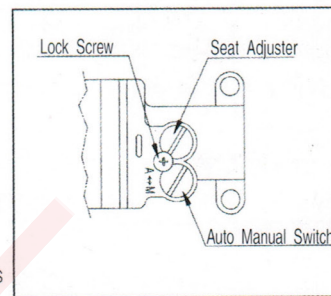
#### 5-3 Auto/Manual Switch

- ① This is a Switch for changing Auto and Manual.  
Shipped products is set for Auto. To use Manual operation, turns A/M Switch counterclockwise.
- ② In manual operation, the pressure of regulator connects to Actuator.
- ③ After using, return switch to "A".  
Not available for Single Acting-OUT2 and Double Acting.

#### 5-4 Seat Adjuster

- ① No need to adjust at the field because Seat Adjuster is to be adjusted before shipment for balanced pressure point of output pressure.  
Seat Adjuster is always used for Double-acting.
- ② If need to change balanced pressure point of output pressure, use Seat Adjuster.

- ③ If the sensitivity is poor because of the actuator type of load condition, turn the seat adjuster screw clockwise. If hunting occurs, turn the seat adjuster screw counterclockwise (The amount of turning varies by actuators,



Do not loosen the stopper screw at this time since it is set to avoid the screw coming off)

- ④ If hunting occurs due to an actuator of small capacity, refer to a description in chapter 6. OPTION.

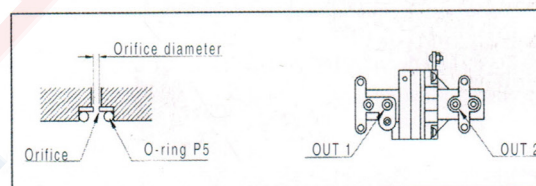
### 6. OPTION

#### 6-1 Pilot valve with output orifice

- ① Hunting may occur when the positioner is attached to a small capacity actuator. In such case, use a pilot valve having a output orifice for OUT1 and OUT2. The output orifice is removable.
- ② Output orifice types

Volume of actuator	Output orifice diameter	Ordering NO.
below 90cm <sup>3</sup>	Ø 0.7	①
90 ~ 180cm <sup>3</sup>	Ø 1.0	②
over 180cm <sup>3</sup>	None	③

- ③ After pulling out the O-ring from OUT1 and OUT2 port. push proper orifice and then mount the O-ring to OUT1 and OUT2 again. When mounting the output orifice, pay attention not to let dust and others enter the port hole.
- ④ If the hunting dose not stop even after mounting the output orifice. please contact us.



### 7. WARNING

- ① Do not apply large vibration or impact to the positioner. It causes trouble. The positioner must be handled very carefully during transportation and operation.
- ② If the positioner is used under temperature outside of the specification, the sealing materials deteriorate quickly and also the positioner may not operate normally.
- ③ Use clean supply air fully removed humidity and dust.
- ④ If you leave the positioner at the operation site for a long time without using it, put the cover on it so that the rain water does not enter the positioner. If the atmosphere is of high temperature or high humidity, take measures to avoid condensation inside. The condensation control measures must be taken through it for export shipment.