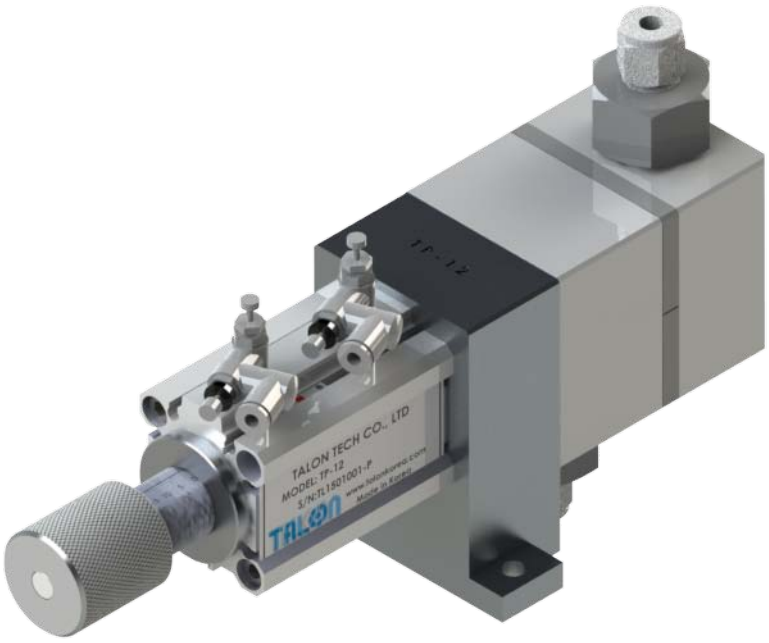
Air cylinder pump for constant dispenses

PUMP MANUAL

MODEL : TP-12



TALON TECH CO. LTD.

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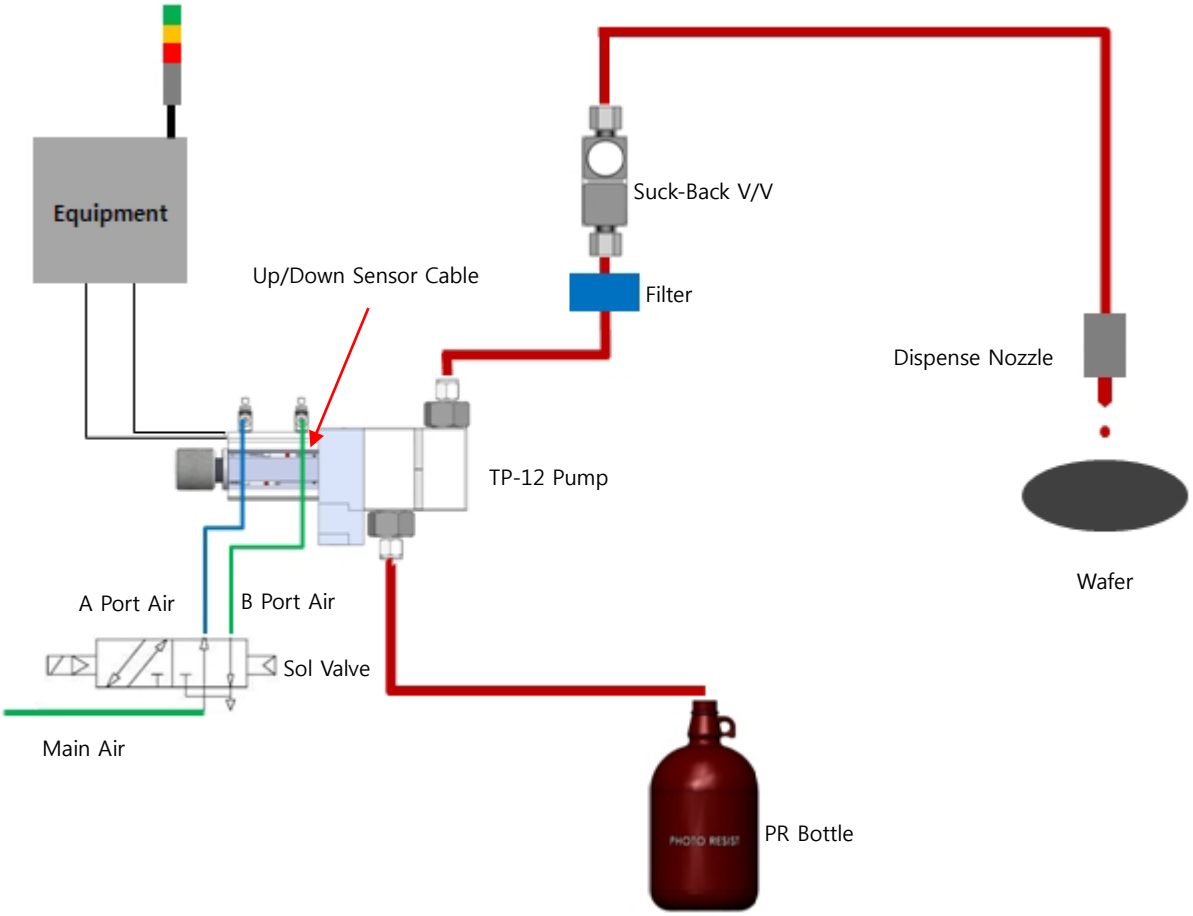
1 System Configurations



TP-12, air cylinder pump, can be used as the above configuration and has been developed conveniently to be compatible with the semiconductor and LED track systems.

Be careful to use the pump by following this manual or Talon Tech's acceptance. Or, other defects should be paid even under the warranty period.

※ Features & Merits

1. All the PR contacting points are made by Teflon.
2. Dispense Method : Outer type Edgeless Bellows.
3. Signal is same as Normal Trigger Signal.

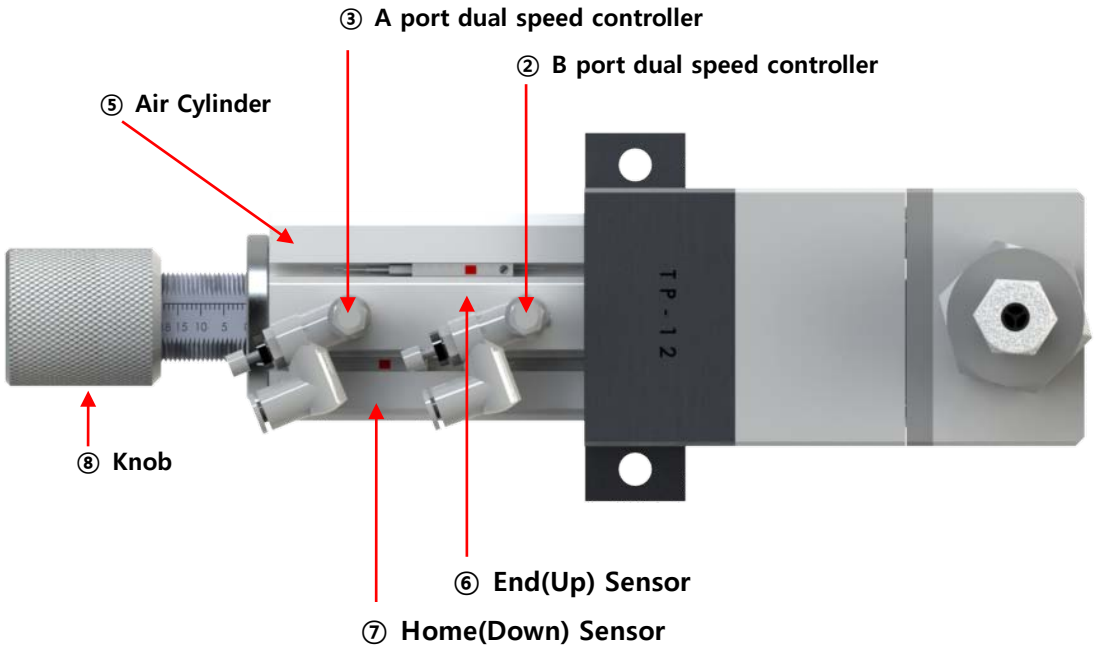
2 System Specifications

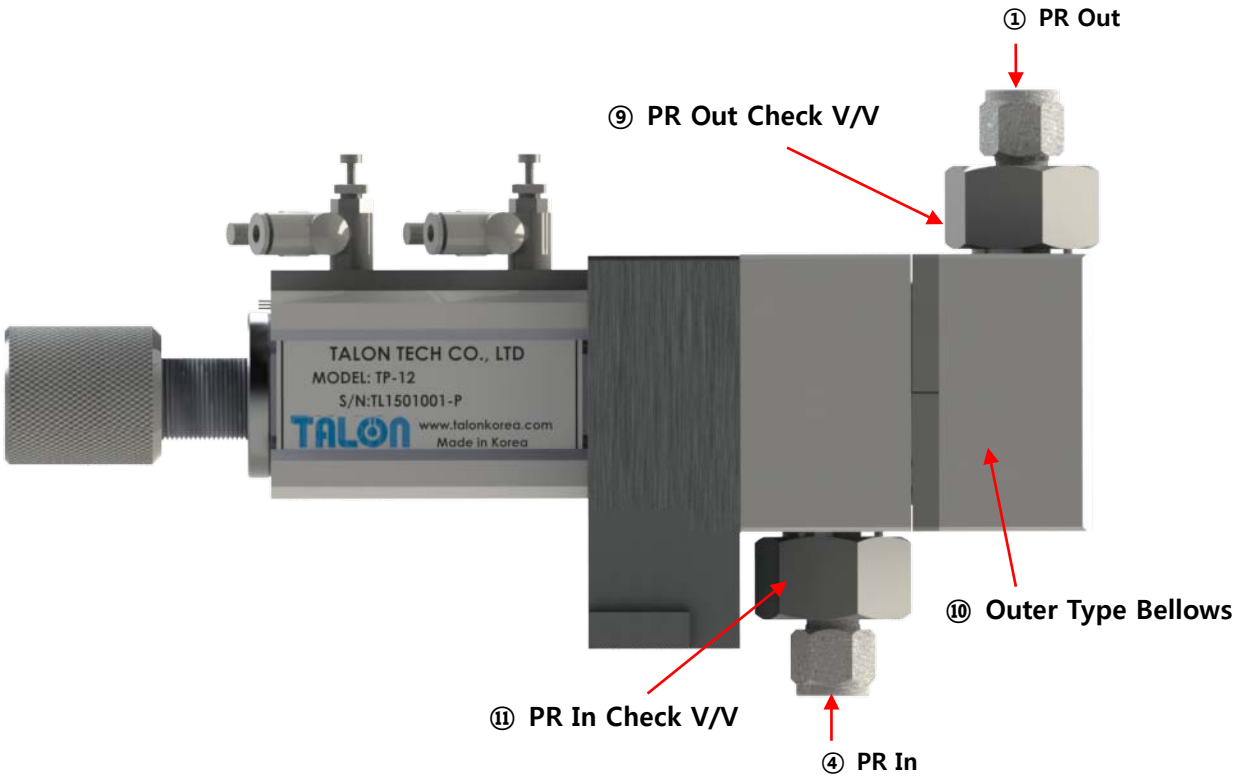
2-1 Pump [TP-12]

ITEM	SPEC	REMARKS
Dispense Volume Range	0.8cc ~ 10.0cc	
Dispense/Reload Rate	0.5cc/sec ~ 4.0cc/sec	
Dispense Volume Resolution	0.05cc	
Dispense Repeatability	≤±0.1 (2.2cp, 23°C)	
Viscosity	Max. 800cp	
Pump Driving Type	Air Cylinder	
Pump Type	Outer Type Bellows	
Display Type	None	
Signal	Normal Trigger Signal (Up/ Down Sensor Signal)	
Electric Power	5 ~ 24VDC (Sensor Power source)	
Resist In/Out	¼ Inch Teflon	
Air	0.2 ~ 0.5Mpa	
Weight	1.37kg	
Dimension	W : 80mm, L : 234mm, H : 131mm	

3 System In/Exterior Names

3-1 Pump In/Exterior Names





3-1-1 Pump Name Explanation

① **PR Out**

- Chemical Dispense. (¼ Inch Teflon)

② **B port dual speed controller**

- Adjust the discharge and suction time by controlling the air ("B" Port)

③ **A port dual speed controller**

- Adjust the discharge and suction time by controlling the air ("A" Port)

④ **PR In**

- Chemical Supply. (¼ Inch Teflon)

⑤ **Air Cylinder**

- Air cylinder for the operating pump (0.1 ~ 0.5Mpa)

⑥ **End(Up) Sensor**

- Sensor for air cylinder's up (End)

⑦ **Home(Down) Sensor**

- Sensor for air cylinder's up (End)

⑧ **Knob**

- Dispense Volume Control Gauge.

⑨ **PR Out Check V/V**

- check valve for on/off at PR outlet Pump.

⑩ **Outer Type Bellows**

- Outer type bellows for PR dispense.

⑪ **PR In Check V/V**

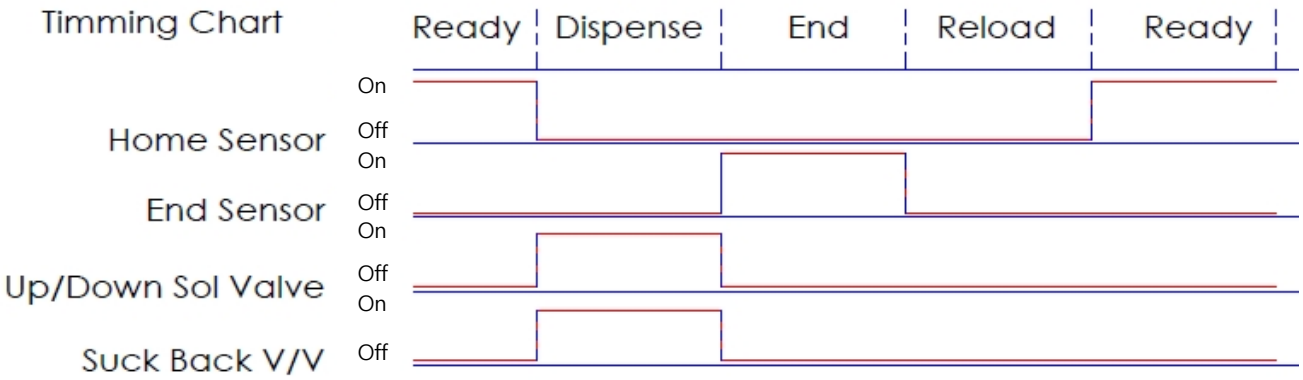
- check valve for on/off at PR inlet

4 Track Interface

4-1 Operation Sequence

Sequence	Home(Down) Sensor	End(Up) Sensor	Up/Down Sol Valve	Suck-Back Sol Valve
Ready	On	Off	Off(B Port)	Off
Dispense Start	Off	Off	On(A Port)	On
End	Off	On	Off(B Port)	Off
Reload	Off	Off	Off(B Port)	Off
Ready	On	Off	Off(B Port)	Off

4-2 Timing Chart

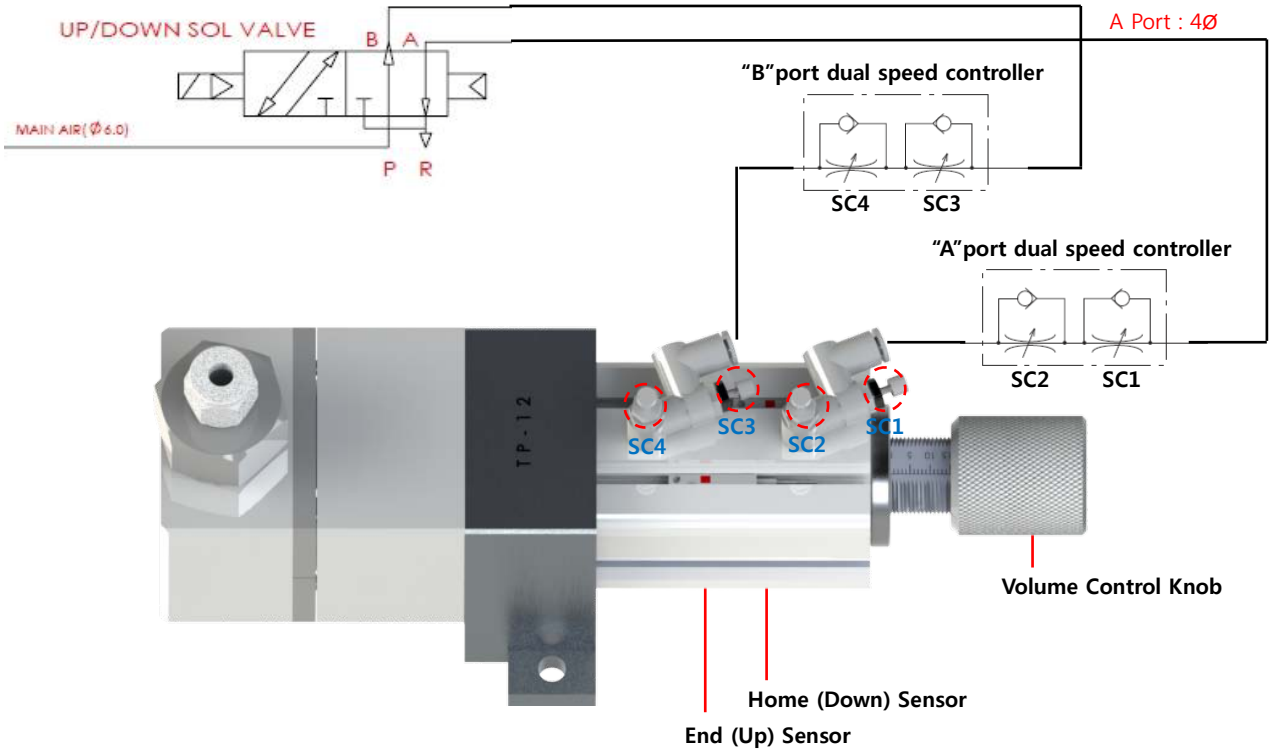


4-3 Pin Assign

Division	Pump			Equipment		
	Pin NO.	Name	Color			
UP (End)	1	+5~24VDC	Brown			
	2	Out	Black			
	3	GND	Blue			
Down (Home)	1	+5~24VDC	Brown			
	2	Out	Black			
	3	GND	Blue			

5 Maintenance

5-1 Wiring Diagram & Operation Explanation



[PIC 1 - WIRING]

※ In order to adjust the discharge and suction time, use Dual speed controller.

- **SC1, SC4 : for adjusting the discharge.**
- **SC2, SC3 : for adjusting suction time.**

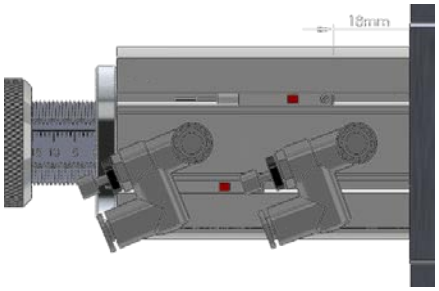
1. Connect Sol Valve & Air(4Ø) to dual speed controller each as above [PIC 1 - WIRING].
2. Connect Home/End Sensor to I/O Signal in the system.
3. Match the sensor signal sequence as Timing Chart in the previous page.
4. The home sensor should be located at Ready (before Chemical Dispense).

※ Suggest to have the pump in/out check valves wet by pressurizing PR bottle with N2 before the pump works.

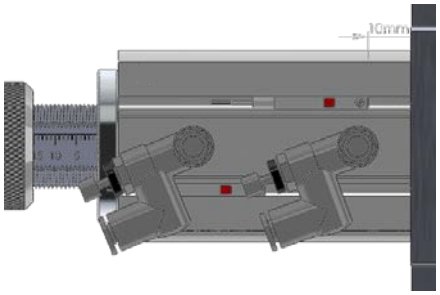
5. When the system gives the dispense signal, the chemical dispenses during Up/Down Sol Valve & Suck-Back Valve's on.
6. When End Sensor works, the chemical supplies to the pump during UP/Down Sol Valve & Suck-Back Valve's off.
7. When Home Sensor works, the pump stops.

※ It is abnormal to dispense without Home Sensor's work. Check the system's software to give the alarm to the system.

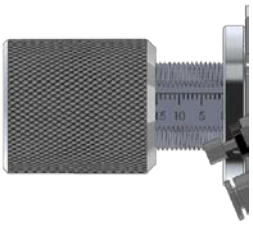
5-2 Dispense Volume Adjustment Method



[PIC 1]
5cc (3.95g)



[PIC 2]
10cc (7.90g)



[PIC 3]
Knob value 15

※ Items to Know on Dispense Volume Adjustment

1. Up Sensor for micro adjustment and Knob for micro adjustment.
2. Don't move Down Sensor Bracket, which is fixed.
3. The standard Knob's valve is 14.
4. Air Cylinder Up/Down Speed is Up(1sec)/Down(1.5sec) in case of 4cc.

★ It is subject to the facility environment for Air Cylinder Up/Down Speed.

※ Dispense Volume Adjustment Method(Acetone standard)

1. 4cc Volume Adjustment : the distance between Up Sensor Bracket & Down Sensor Bracket is 18mm as [PIC-2]. And the micro adjustment is done by Knob.
2. 8cc Volume Adjustment : the distance between Up Sensor Bracket & Down Sensor Bracket is 10mm as [PIC-2]. And the micro adjustment is done by Knob.
   [Knob – micro adjustment] ±0.38g / ±180° revolution.

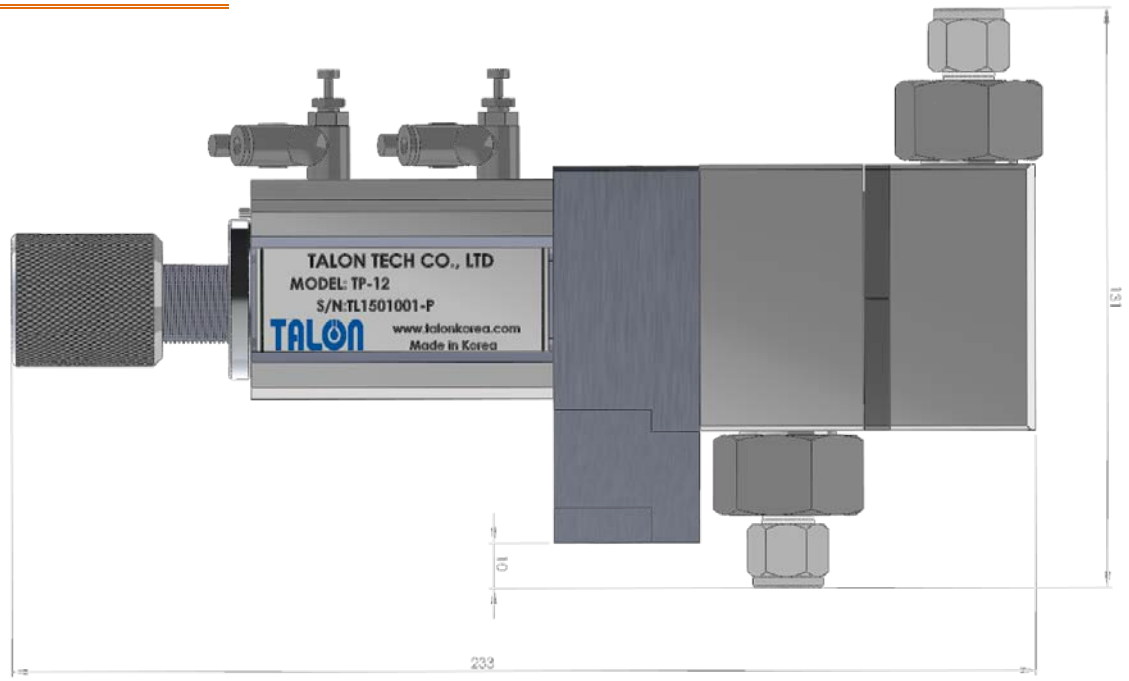
6 Recommended Spares / Mechanical Dimensions

6-1 TP-12 Spare Parts

Division	Part NO.	Description	Qty
Pump	TL-12-TA-001	¼ Inch PFA Fitting Nut	2
	TL-12-TA-002	Edge Less Bellows	1
	TL-12-TA-003	Check Valve Assembly	2
	TL-12-TA-004	Fitting	2
	TL-12-TA-005	Nut	2
	TL-12-TA-006	Cylinder	1
	TL-12-ET-001	O-Ring (Check Valve)	2
	TL-12-ET-002	O-Ring (Cylinder)	1
	TL-12-CB-001	Speed Control	2
	TL-12-CB-002	Air Cylinder	1
	TL-12-EA-001	Magnetic Sensor	2

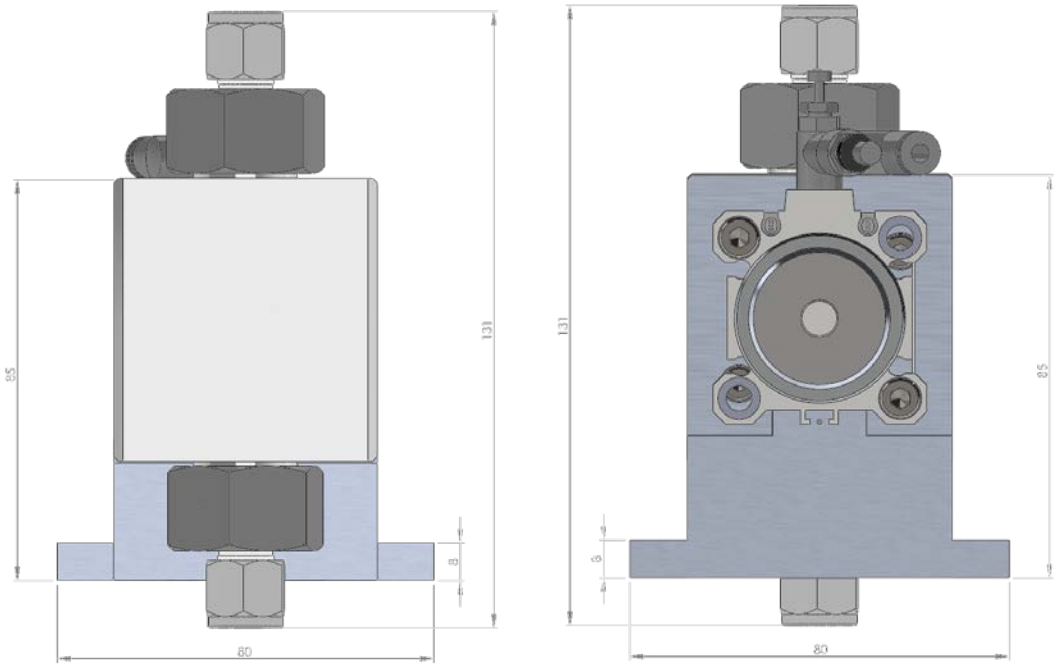
6-2 Pump Dimensions

6-2-1 Side View



[Side View]

6-2-2 Front / Rear View

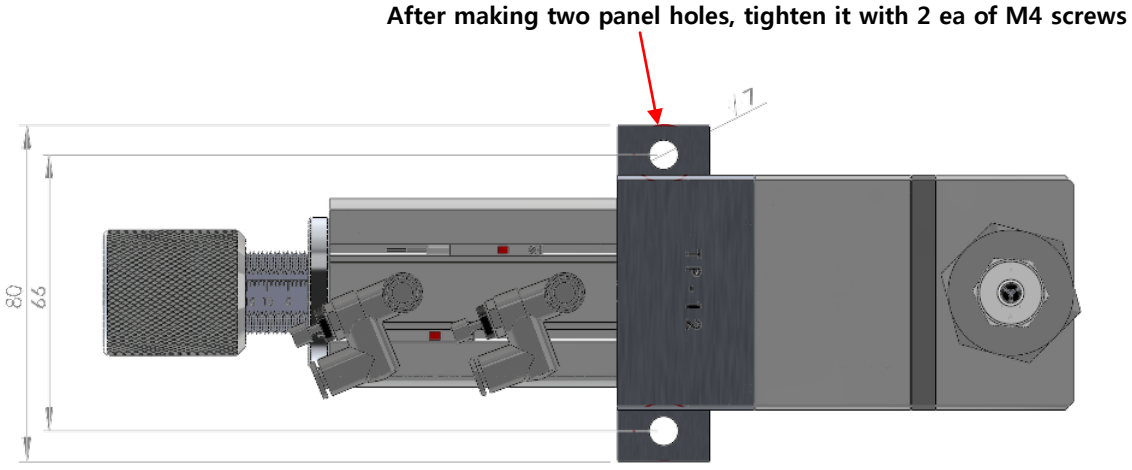


[Front View] [Rear View]

6-3 Installation Method

6-3-1 Pump Installation Sequence

1. Prepare the space for the pump installation.
2. Tighten the panel base plate with 2 pieces of M4 screw.



6-3-2 Piping Method

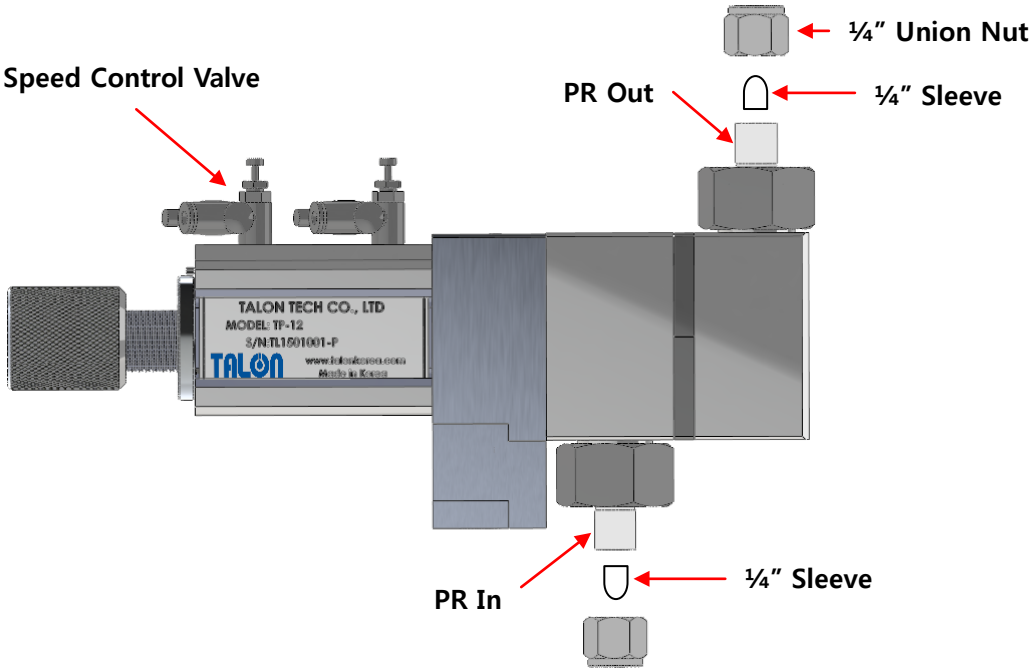
1. PR Tube Piping

1) Insert ¼" union nuts on tube at PR In/Out areas.

2) Insert ¼" sleeve into tube after enlarging tube with the tube expansion tool and then tighten nut.

2. Air Tube Piping

1) Connect 4Ø of air tube into the air speed control valve.



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