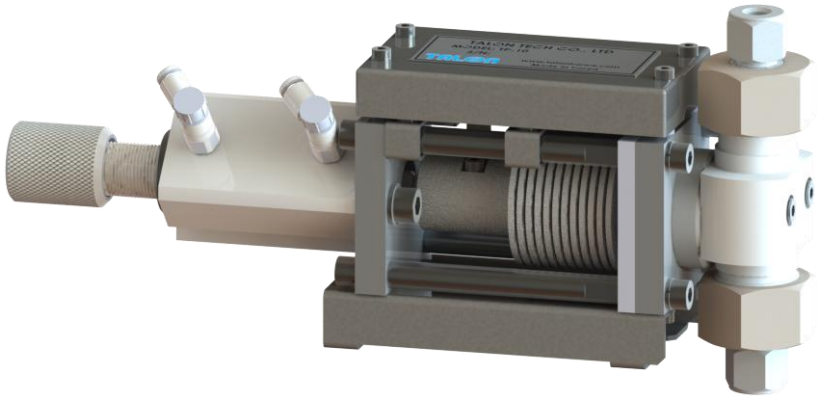
Air cylinder pump for constant dispenses

PUMP MANUAL

MODEL : TP-10



TALON TECH CO. LTD.

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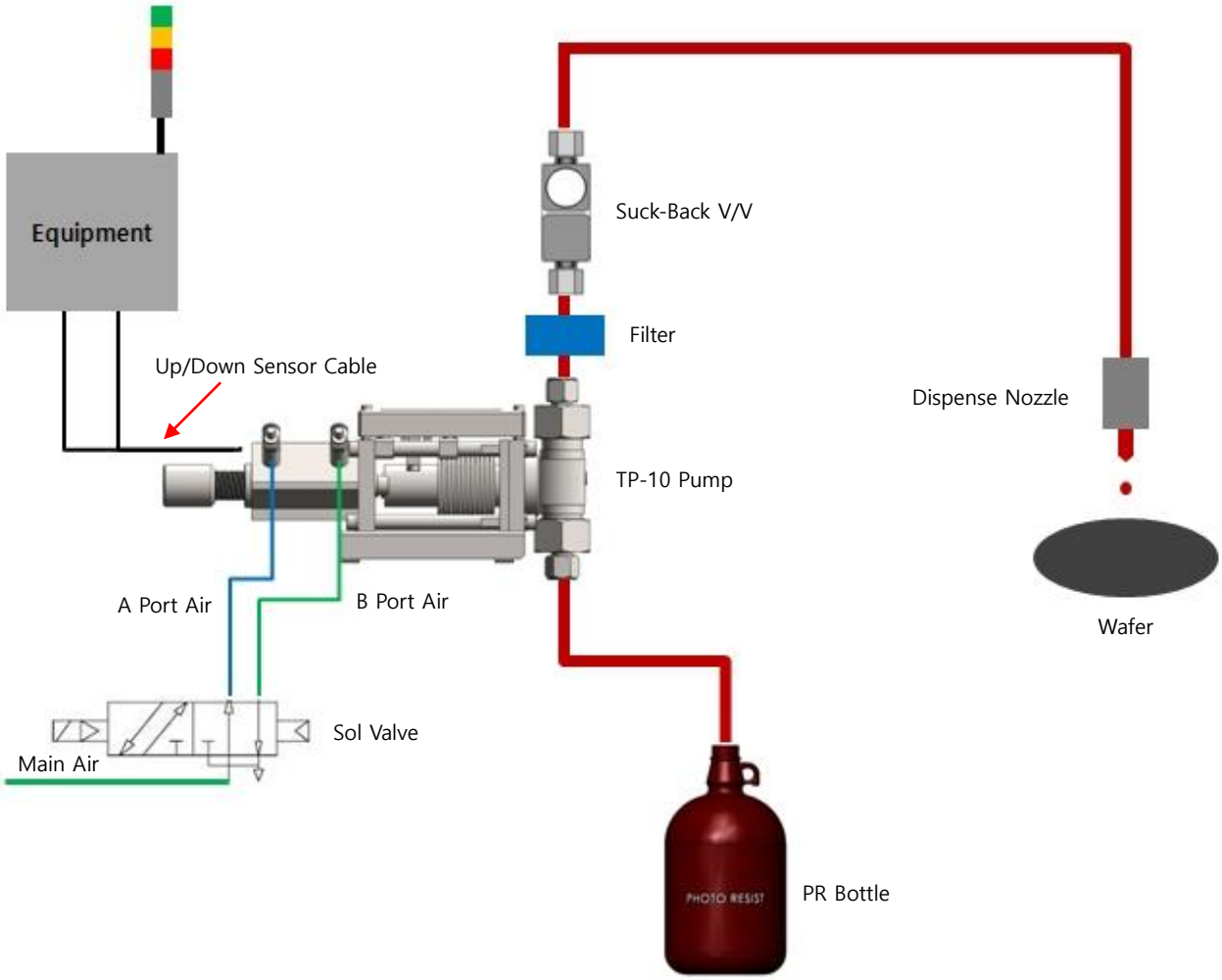
1 System Configurations



TP-10, 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 : Inner type Bellows.
3. Signal is same as Normal Trigger Signal.

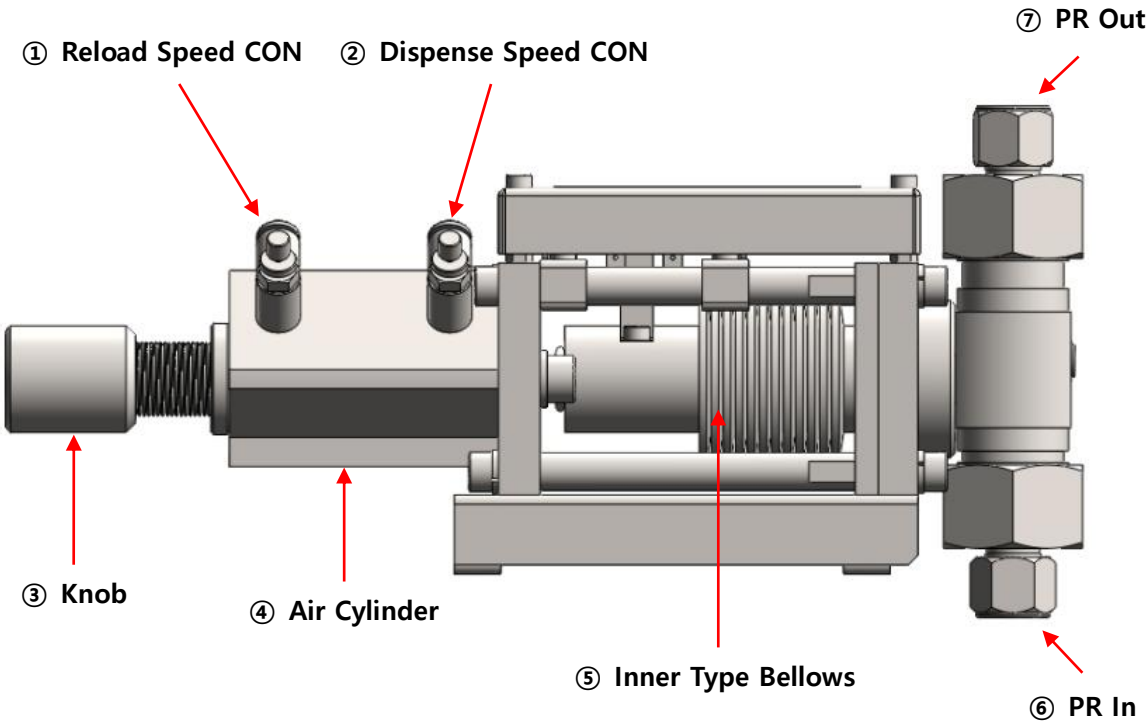
2 System Specifications

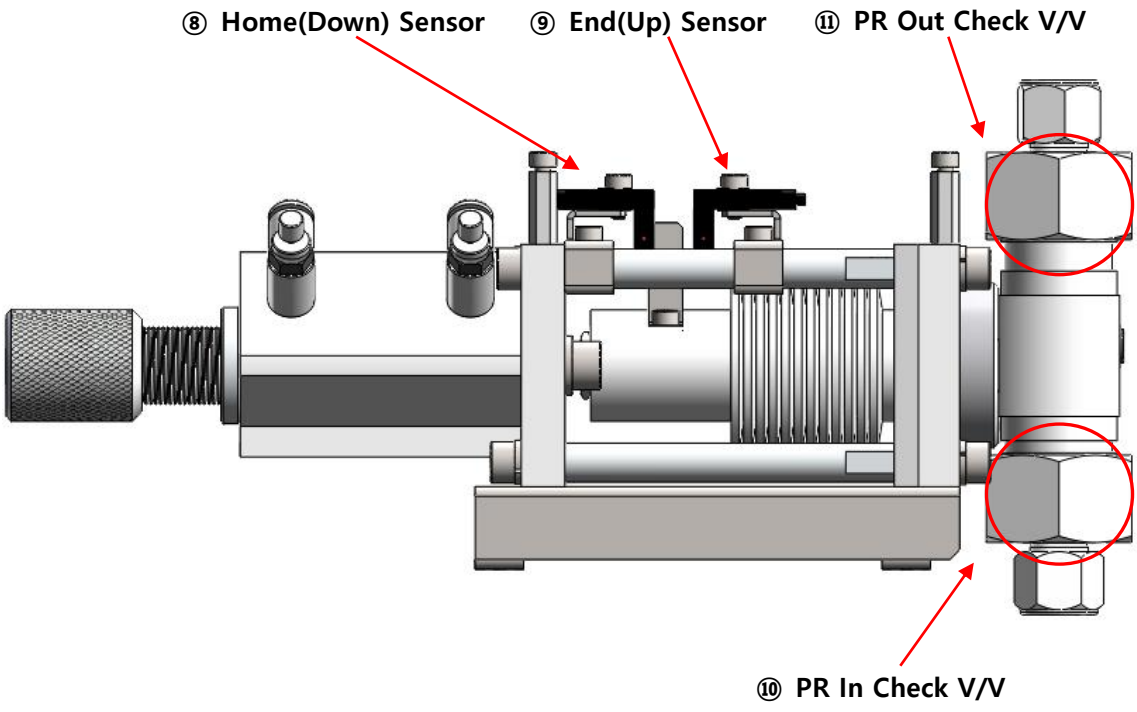
2-1 Pump [TP-10]

ITEM	SPEC	REMARKS
Dispense Volume Range	0.7cc ~ 4.0cc or 0.7cc ~ 8.0cc	
Dispense/Reload Rate	0.5cc/sec ~ 4.0cc/sec	
Dispense Volume Resolution	0.05cc	
Dispense Repeatability	≤±0.1 (2.2cp, 23°C)	
Viscosity	Max. 150cp	
Pump Driving Type	Air Cylinder (SMC OEM)	
Pump Type	Inner Type Bellows	
Display Type	None	
Signal	Normal Trigger Signal (Up/ Down Sensor Signal)	
Electric Power	5 ~ 24V DC (Sensor Power Source)	
Resist In/Out	¼ Inch Teflon	
Air	0.1 ~ 0.3Mpa	
Weight	0.87kg	
Pump Dimension	W : 50.9mm, L : 232.3mm, H : 11.3mm	

3 System In/Exterior Names

3-1 Pump In/Exterior Names





3-1-1 Pump Name Explanation

① **Reload Speed CON**

- Adjust the operating time by controlling the air (“A” Port)

② **Down Speed CON**

- Adjust the dispensing time by controlling the air (“B” Port)

③ **Knob**

- Dispense volume control gauge

④ **Air Cylinder**

- Air cylinder for the operating pump (0.1 ~ 0.3Mpa)

⑤ **Inner Type Bellows**

- Inner type bellows for PR dispense

⑥ **PR In**

- Chemical supply (¼ Inch Teflon)

⑦ **PR Out**

- Chemical dispense (¼ Inch Teflon)

⑧ **Home(Down) Sensor**

- Sensor for air cylinder’s up (End)

⑨ **End(Up) Sensor**

- Sensor for air cylinder’s up (End)

⑩ **PR In Check V/V**

- check valve for on/off at PR inlet

⑪ **PR Out Check V/V**

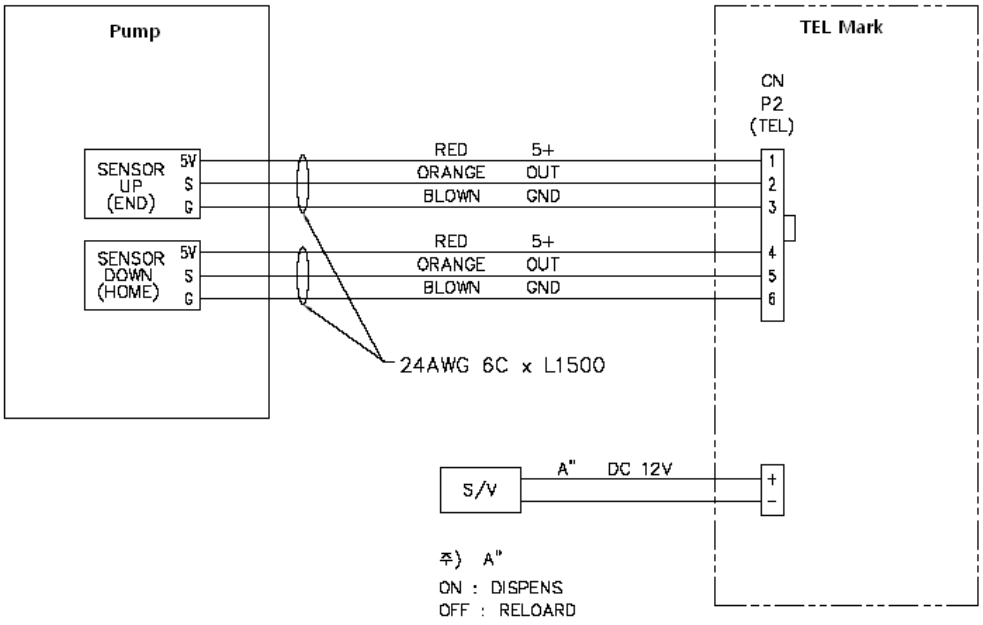
- check valve for on/off at PR outlet

4 Track Interface

4-1 Pin Assign

Division	Pump			Equipment(Standard)		
	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			

Division	Pump			Equipment (For TEL Mark)	
	Pin NO.	Name	Color	Pin NO.	Name
UP (End)	1	+5V	Red	1	CN P2 TEL 6P Connector
	2	Out	Orange	2	
	3	GND	Brown	3	
Down (Home)	1	+5V	Red	4	
	2	Out	Orange	5	
	3	GND	Brown	6	

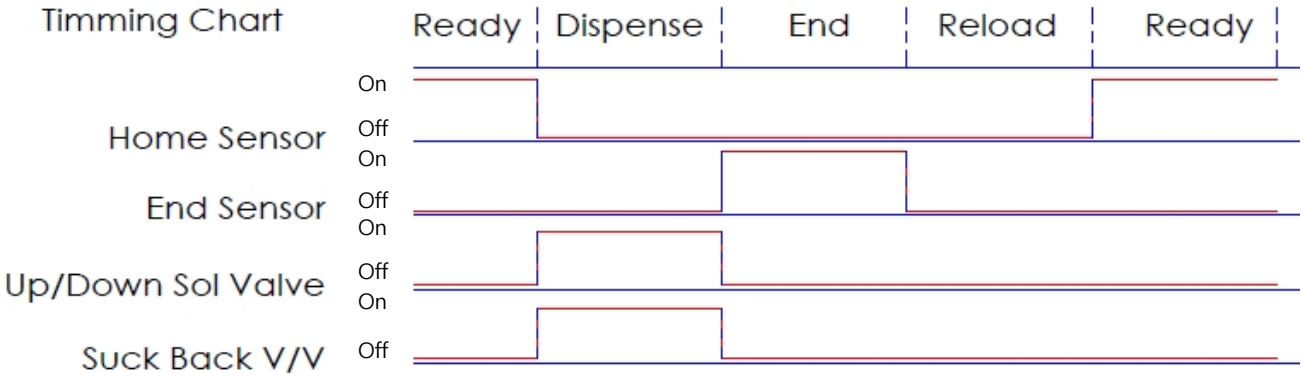


[For TEL Mark]

4-2 Operation Sequence

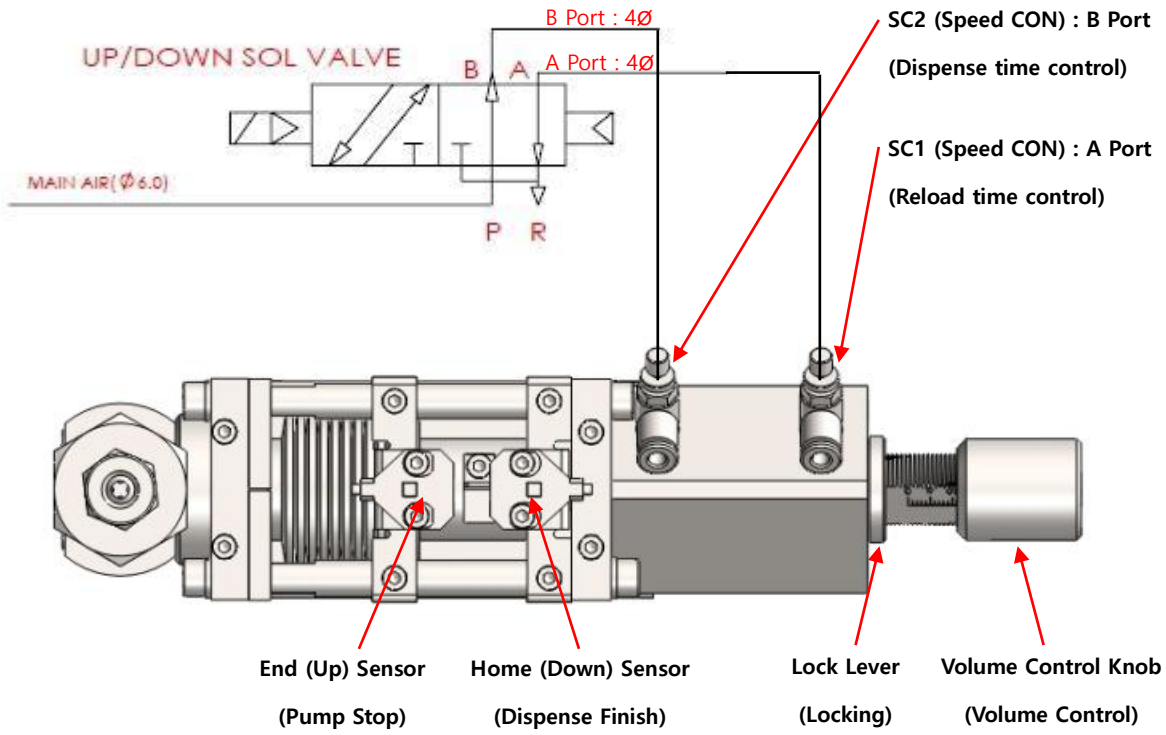
Sequence	Home(Down) Sensor	End(Up) Sensor	Up/Down Sol Valve	Suck-Back Sol Valve
Ready	On	Off	Off(B Port)	Off
Dispense Start	Off	Off	On(A Port)	On
End	Off	On	Off(B Port)	Off
Reload	Off	Off	Off(B Port)	Off
Ready	On	Off	Off(B Port)	Off

4-3 Timing Chart



5 Maintenance

5-1 Wiring Diagram & Operation Explanation



[PIC 1 - WIRING]

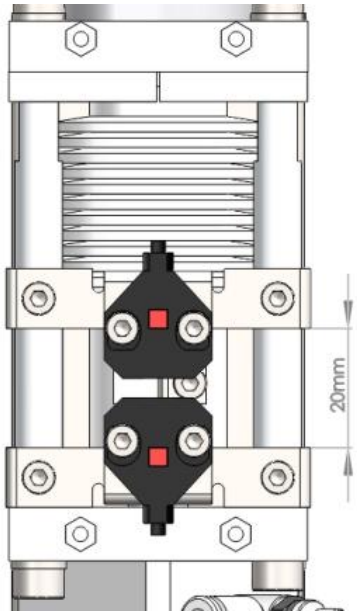
1. Connect Sol Valve & Air(4ø) to SC1 & SC2 each as above [PIC 1 - WIRING].
2. Connect Home/End Sensor to I/O Signal in the system.
3. Match the sensor signal sequence as Timing Chart in the previous page.
4. The home sensor should be located at Ready (before Chemical Dispense).

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

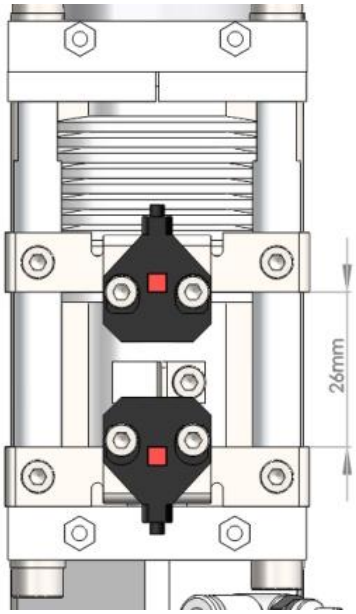
5. When the system gives the dispense signal, the chemical dispenses during Up/Down Sol Valve & Suck-Back Valve's on.
6. When End Sensor works, the chemical supplies to the pump during UP/Down Sol Valve & Suck-Back Valve's off.
7. When Home Sensor works, the pump stops.

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

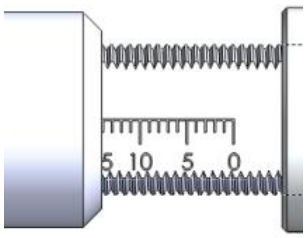
5-2 Dispense Volume Adjustment Method



[PIC 2]
4cc (3.15g)



[PIC 3]
8cc (6.32g)



[PIC 4]
Knob valve 14

※ 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 20mm 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 26mm as [PIC-2]. And the micro adjustment is done by Knob.
   [Knob – micro adjustment] ±0.24g / ±180° revolution.

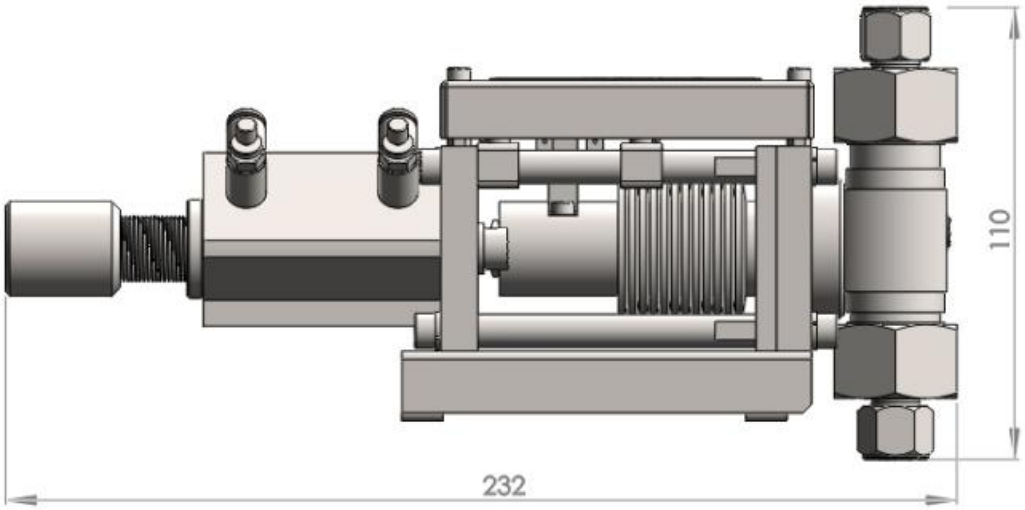
6 Recommended Spares / Mechanical Dimensions

6-1 TP-10 Spare Parts

Division	Part NO.	Description	Qty
Pump	TL-10-TA-001	Head	1
	TL-10-TA-002	Check V/V Assembly	2
	TL-10-TA-003	Nut	2
	TL-10-TA-004	Fitting	2
	TL-10-TA-005	¼ Inch PFA Fitting Nut	2
	TL-10-TA-006	Bellows Assembly	1
	TL-10-CB-001	Air Cylinder	1
	TL-10-CB-002	Speed Control	2
	TL-10-EA-001	Photo Sensor	2

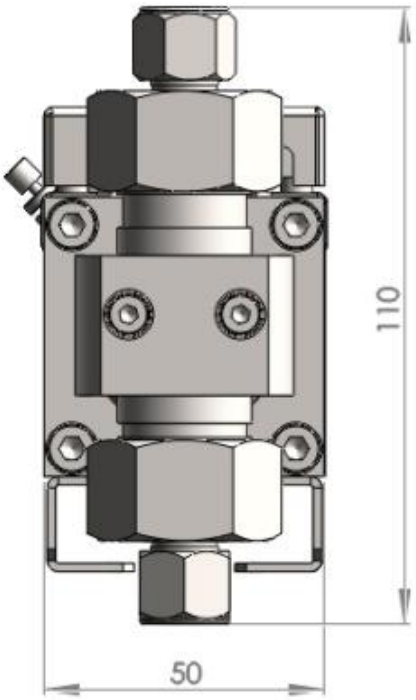
6-2 Pump Dimensions

6-2-1 Side View

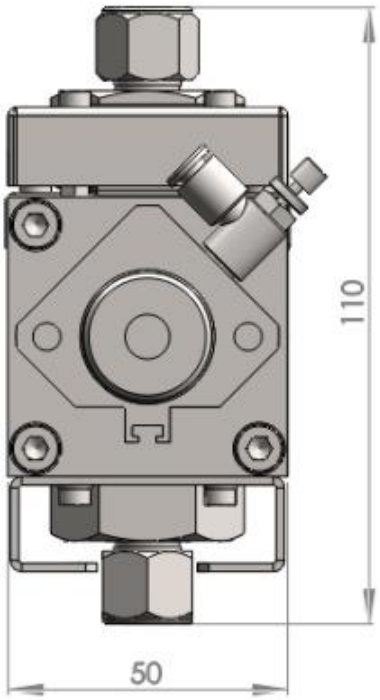


[Side View]

6-2-2 Front / Rear View



[Front View]

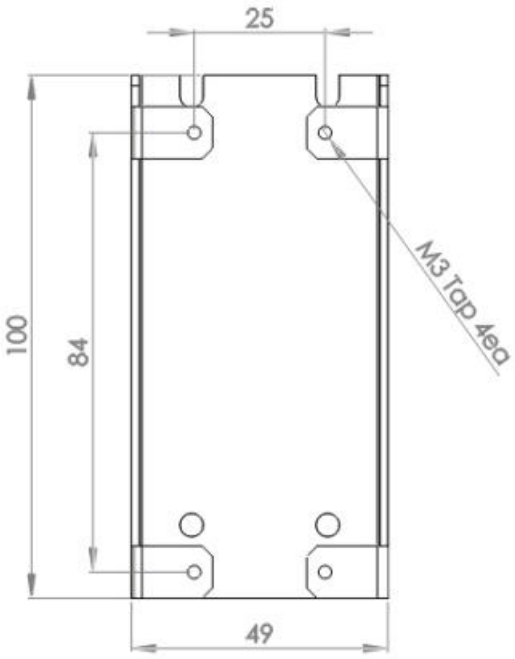


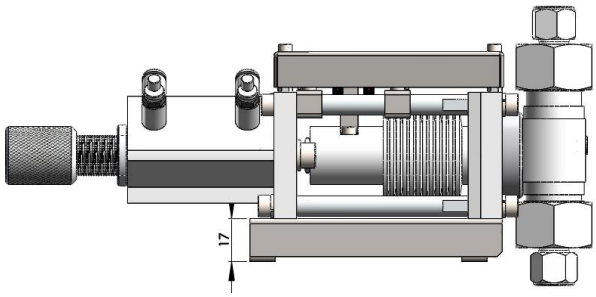
[Rear View]

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 4 pieces of M3 screw.





6-3-2 Piping Method

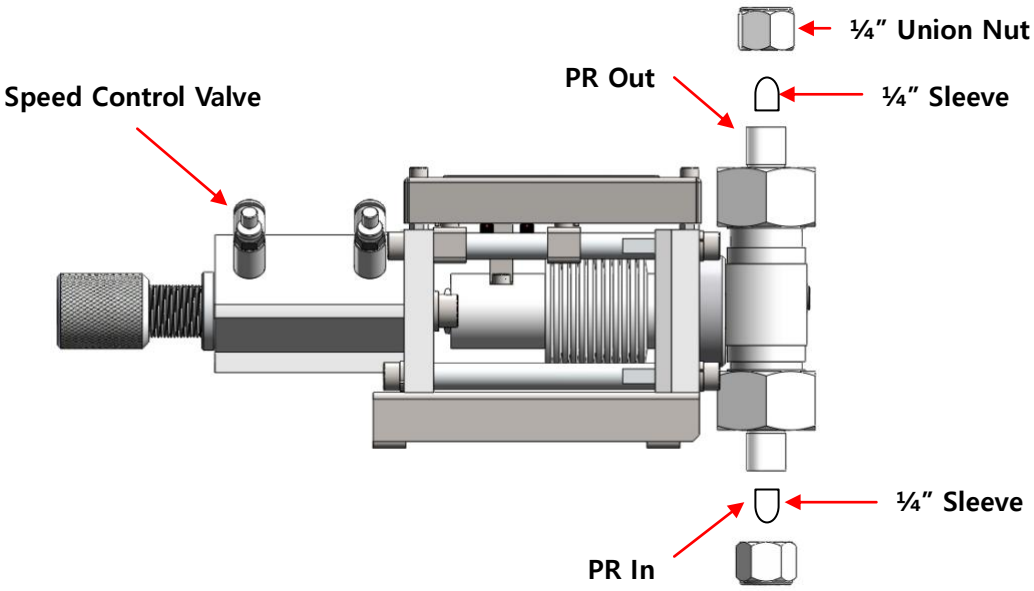
1. PR Tube Piping

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

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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