

New Pump Proposal from FLOM

NOVEMBER 24, 2015

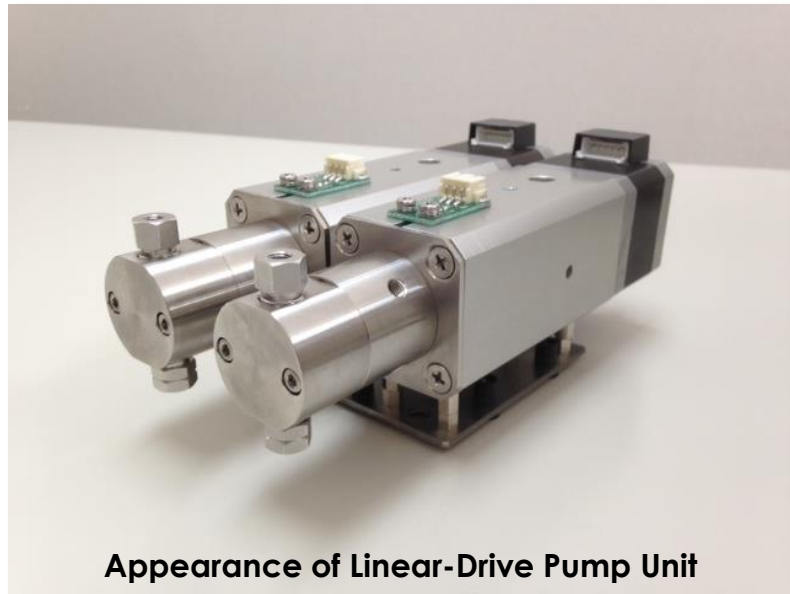
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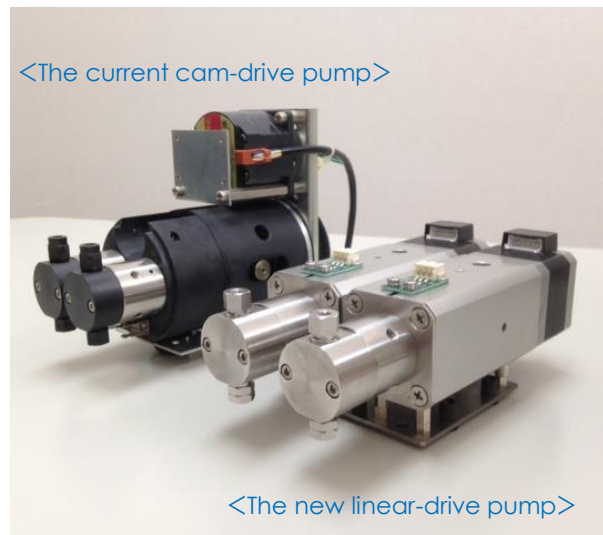
Concept of the New Linear-Drive Pump



Appearance of Linear-Drive Pump Unit

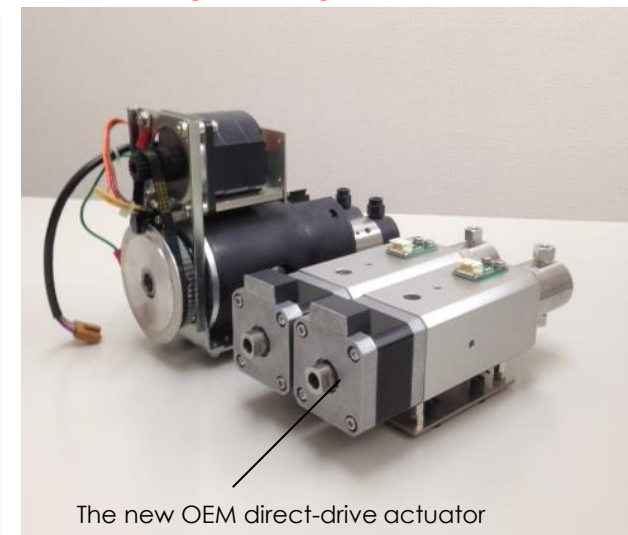
Features :

- Application of the new OEM direct-drive actuator (motor)
- Downsizing the pump unit
- Improvement of maintenance by parts reduction
- Less mechanical friction with plunger's horizontal motion
- Less chance to occur stuck air with the longer plunger's motion



<The current cam-drive pump>

<The new linear-drive pump>



The new OEM direct-drive actuator

Advantage of the new Linear-drive Pump

Comparison Chart of Dual Pumps 1



AI Series



KP Series



The New LD Series

Performance



Ease in Operation



Advantage of the new Linear-drive Pump

Comparison Chart of Dual Pumps 2



AI Series



KP Series

	Cam Driving Method	
Driving Method	Cam Driving Method	
Plunger Stroke	4mm	
Flow Range	0.001-50.0 mL/Min	
Max. Pressure	30 MPa	25 MPa
Features	Active Pulsation Control Function <ul style="list-style-type: none"> • Real-time Pressure Feedback • Self-learning Pulsation Control • Self-regulating Mechanism 	Pulsation Control Function <ul style="list-style-type: none"> • Pressure Feedback • Pulsation Control with Pre-installed Program • Self-regulating Mechanism



The New LD Series

Linear Driving Method

10mm

0.001-100.0 mL/Min

35 MPa

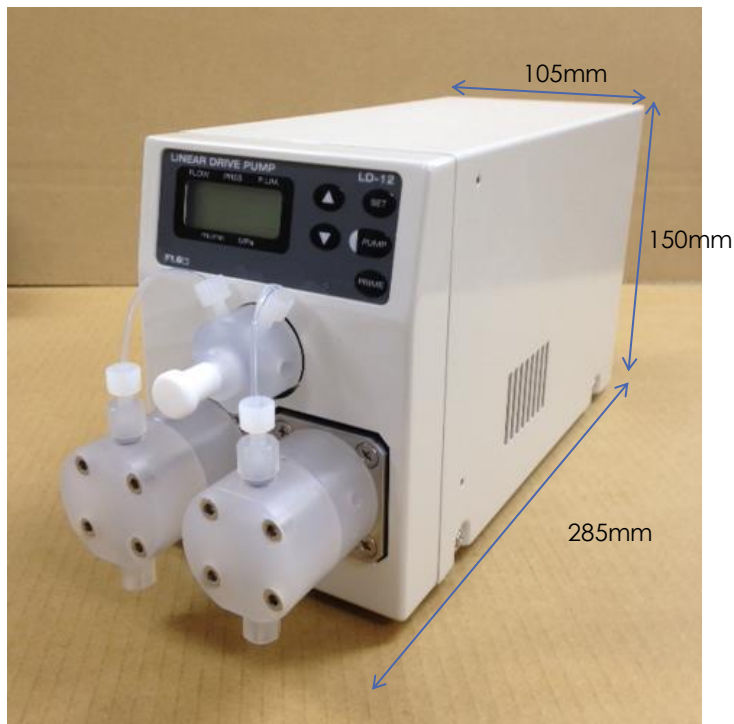
Active Pulsation Control Function

- Pressure Feedback
- Pulsation Control with Pre-installed Program

More features will be applied.

Proposal of 100mL/Min Teflon pump

Product Appearance and Dimension



Wetted Material: Teflon, PCTFE, PTFE, Sapphire, Ruby

Plunger Diameter: 9.5mm

Max. Flow Rate : 100mL/Min.

Flow Volume Accuracy: $\pm 0.3\%$

Max. Pressure : 2MPa

Check Valves : Inlet No.1/4-28UNF
Outlet No.10-32UNF

Tubing : Inlet OD3.0mm x ID2.0mm (2pcs.)
Outlet OD1/8" x 1/16" (1pc.)

Trouble Shooting

Trouble Shooting Performance

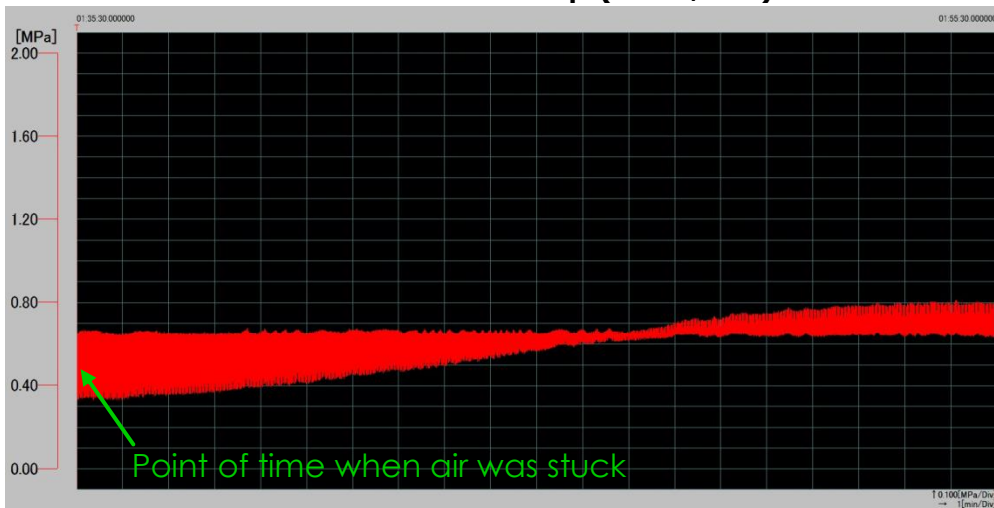
Symptom: Flow reduction due to stuck air inside the pump heads

Root cause: Once the air was stuck, 4mm stroke of plunger motion was inadequate to push out the air.

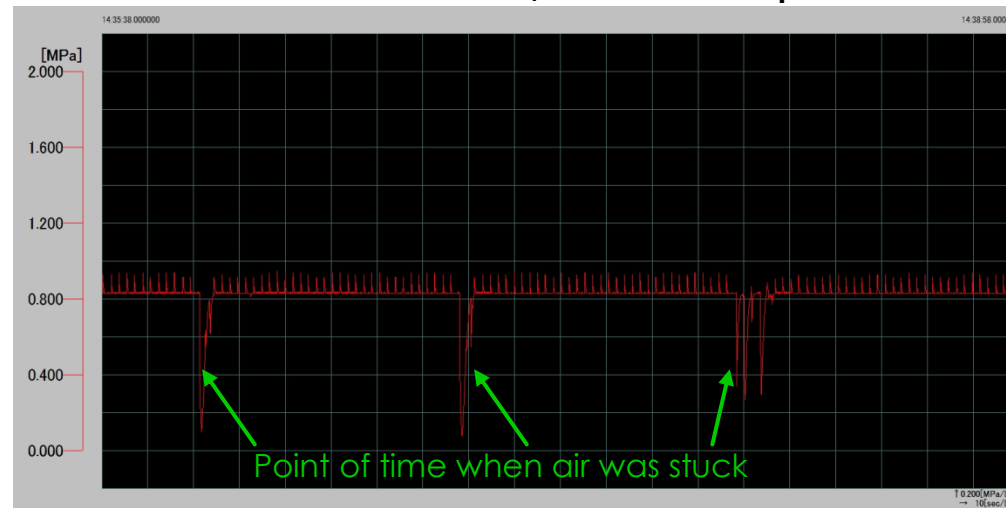
Improvement Action: 10mm of the longer plunger stroke pushes out the stuck air immediately

Test result with introducing air during operation: (Test solvent: water, Flow rate: 20mL/Min., Pressure: 0 MPa)

KP-22-33D Teflon Pump (50mL/Min)



The new 100mL/Min Teflon Pump



Trouble Shooting

Trouble Shooting Performance

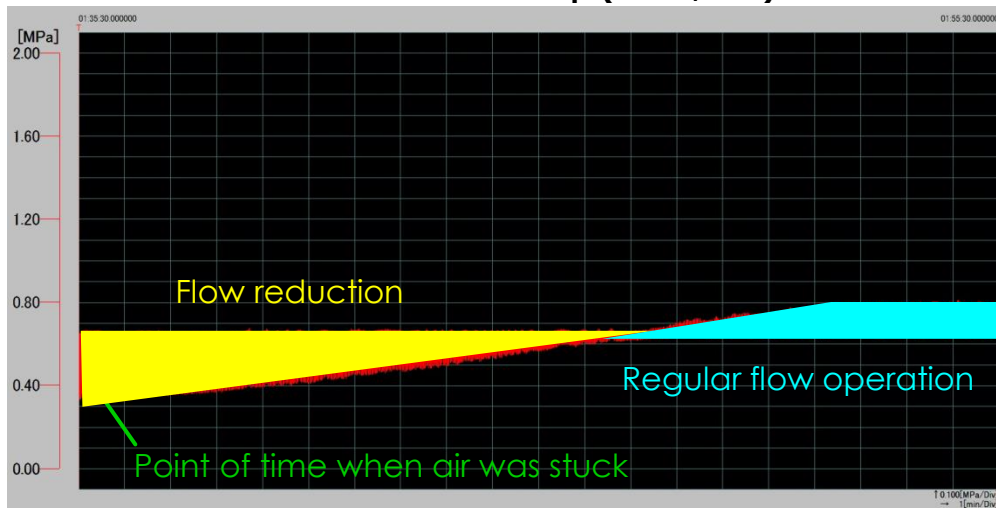
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