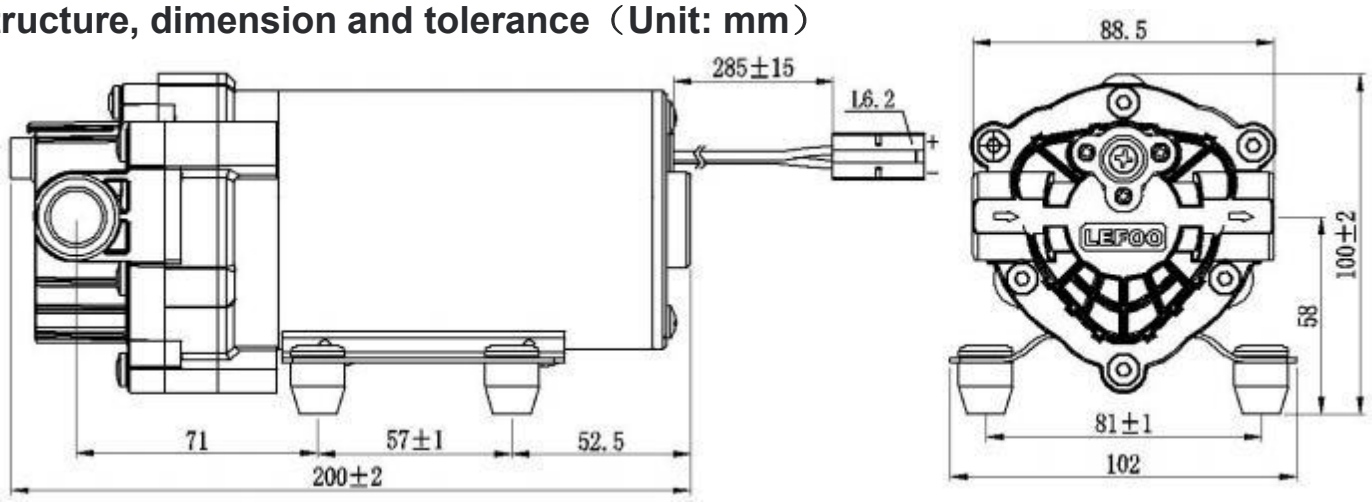
Structure, dimension and tolerance（Unit: mm）



Remark: Inlet and outlet connection is NPT 3/8 connector; Cable 18AWG x 2C x L285mm(black and red) with L6.2 terminal (the tolerance of the cable should be±15mm).

Technical specification

Applicable medium: Ethylene glycol + pure water (It is recommended that the ratio of ethylene glycol be less than 50%).

Model	Voltage (V)	Workig flow rate (ml/min)	Temperature (25℃)		Temperature (-40℃)		Self-Priming Lift (m)	Bypass pressure (MPa)
			Working current (A)	Bypass current (A)	Working current (A)	Bypass current (A)		
LFP030R-13	DC 24±0.3	3000	≤2.0	≤3.0	≤4.5A	≤7.0A	≥2	≤0.6
LFP040R-13	DC 24±0.3	4000	≤2.5	≤3.5	≤5.0A	≤7.5A	≥2	≤0.6
LFP050R-13	DC 24±0.3	5000	≤3.0	≤4.5	≤6.5A	≤10A	≥2	≤0.6
LFP060R-13	DC 24±0.3	6000	≤4.0	≤5.5	≤7.0A	≤11A	≥2	≤0.6

Remark：

Voltage: DC 24V±0.5V

Working flow rate: At temperature (25℃), the inlet pressure is 0MPa, and the outlet is open for testing

Working current: Inlet pressure is 0MPa, outlet is open

Bypass current: Inlet pressure is 0MPa, and the outlet is completely closed.

Self-priming height: When the pump is in operation, the inlet is connected to a negative pressure gauge. The pressure value displayed on the negative pressure gauge is the self-priming height of the pump.

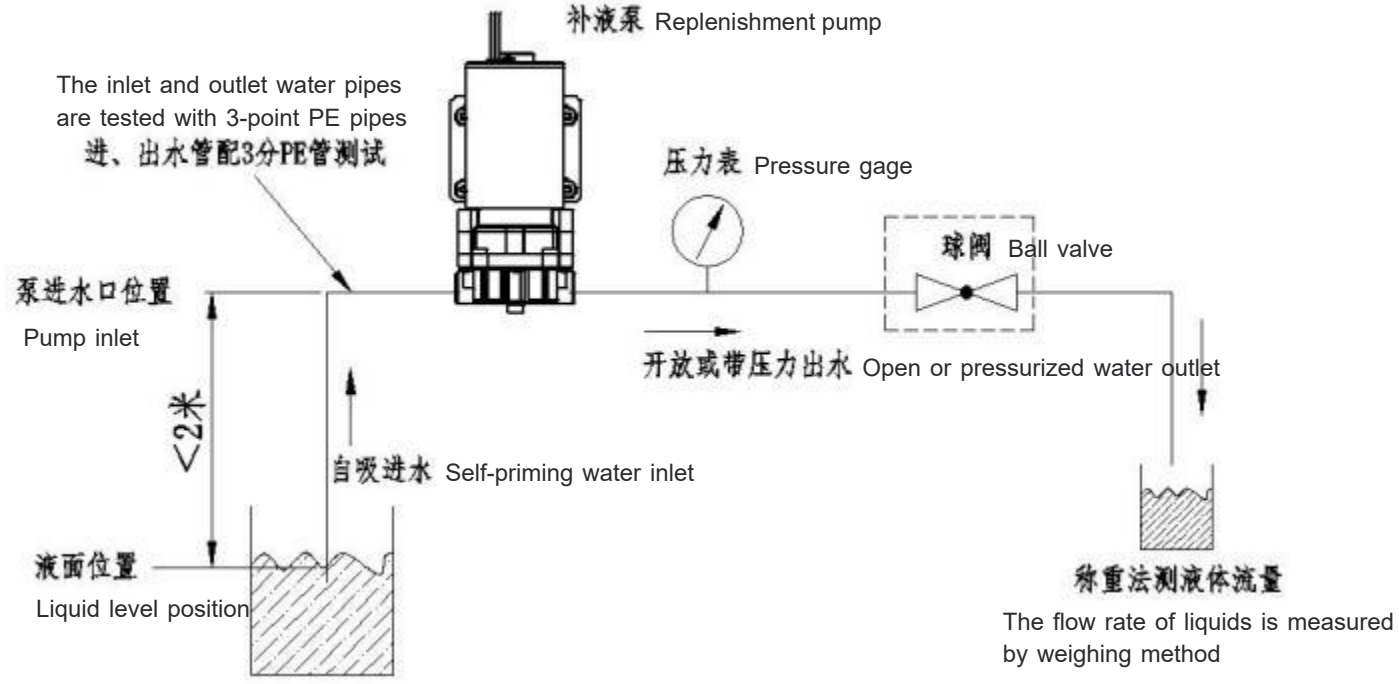
Bypass pressure: Inlet pressure is 0MPa, and the outlet is completely closed.

When measuring the working current, locked-rotor current and working flow rate, the pump should be allowed to run for 5 to 10 minutes until it stabilizes before starting the measurement. All the above tests were conducted at room temperature with water as the medium, except for the low-temperature test which required 50% ethylene glycol as the medium.

Technical requirement

1	Appearance	No shedding of electrophoresis coating.No looseness in connection parts.No damage of rubber feet	
2	Electric strength	Power terminal and housing could stand 500V/50Hz/1min without arcing-over or breakdown	
3	Medium Temp	-40℃~55℃;	
4	Working Temp	-40℃~55℃;	
5	Proof pressure quality	Tep(25℃)	The pump should stay water proof as well mechanical well shaped both in working condition and static condition when pressure reach to 1.2Mpa
		Tep(-40℃)	The pump should stay water proof as well mechanical well shaped both in working condition and static condition when pressure reach to 0.6Mpa
6	Service life	Tep(25℃)	Conduct a start–stop test of 100,000 cycles; Operate continuously for 1,000 hours. After completing either of the above tests, there shall be no abnormal phenomena such as water leakage or jamming. Performance degradation in terms of flow rate, noise, etc. shall be ≤ 15%.
		Tep(-40℃)	Conduct a start–stop test of 100,000 cycles; Operate continuously for 500 hours. After completing either of the above tests, there shall be no abnormal phenomena such as water leakage or jamming. Performance degradation in terms of flow rate, noise, etc. shall be ≤ 15%.
7	Ingress Protection rating	IPX5	

Test method:
The make-up pump can be installed at any orientation.
To better ensure air venting (air exhaust) performance, it is recommended to install the pump head vertically downward.



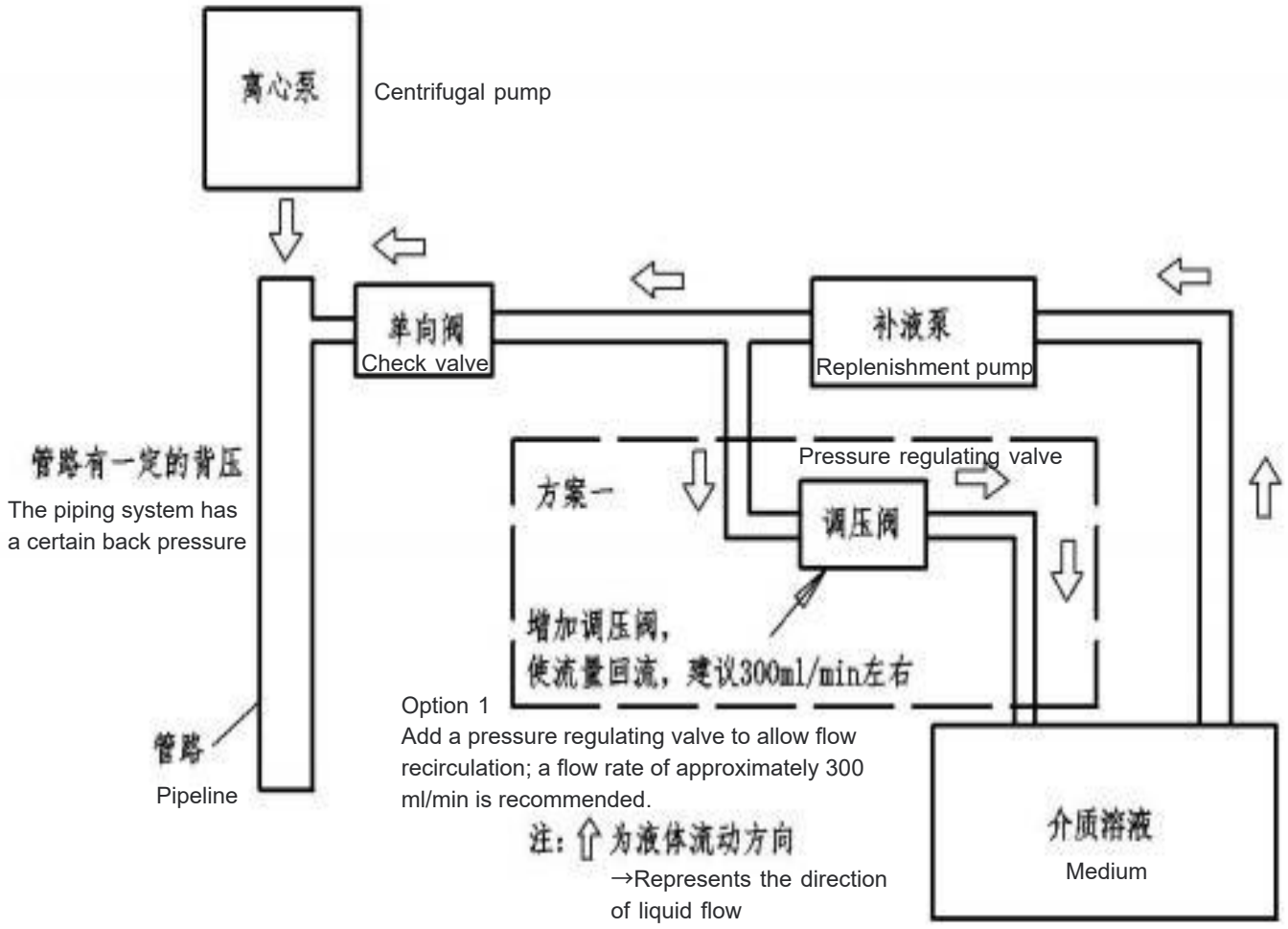
Precautions

The recommended storage period of the pump is within 6 months. Customers are advised to use the pump promptly after purchase to avoid potential performance degradation caused by prolonged storage.

The inlet and outlet shall be installed using standard NPT 3/8 threads. It is recommended to wrap PTFE tape (thread seal tape) 5–6 turns, and engage the threads 5–6 turns during installation.

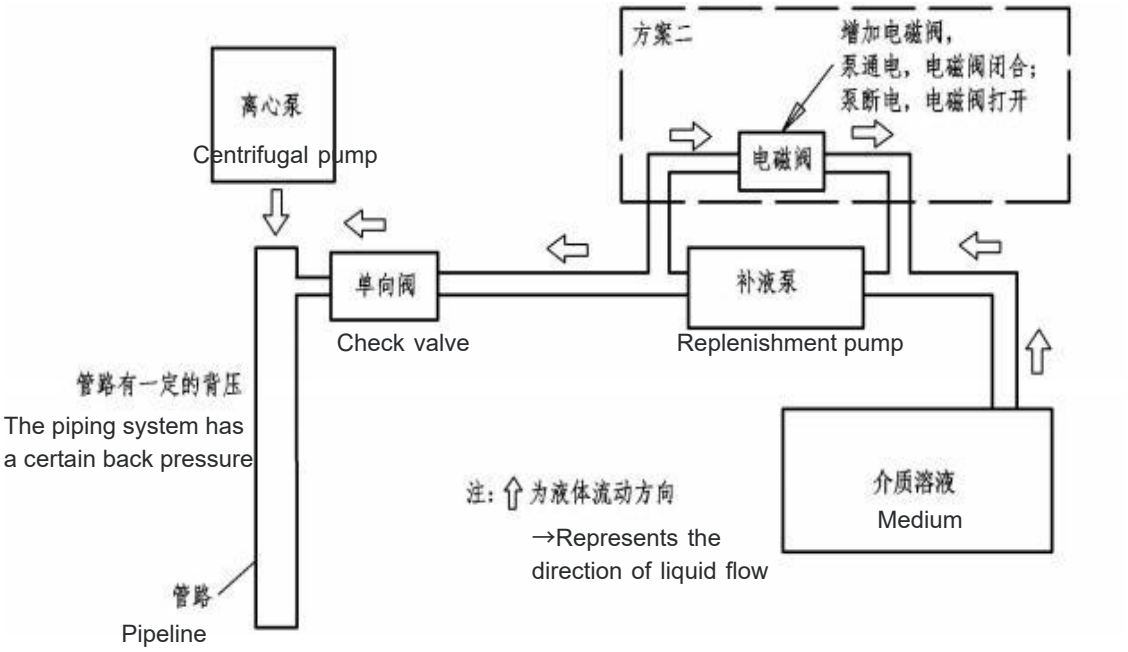
If the pump is directly connected to a piping system (with a certain back pressure), it may result in the make-up pump not operating properly. Therefore, during piping system design, please refer to one of the following solutions (Option 1 or Option 2).

Option 1:
Install a pressure regulating valve downstream of the pump, allowing a small amount of liquid (recommended approx. 300 ml/min) to recirculate back to the storage tank.

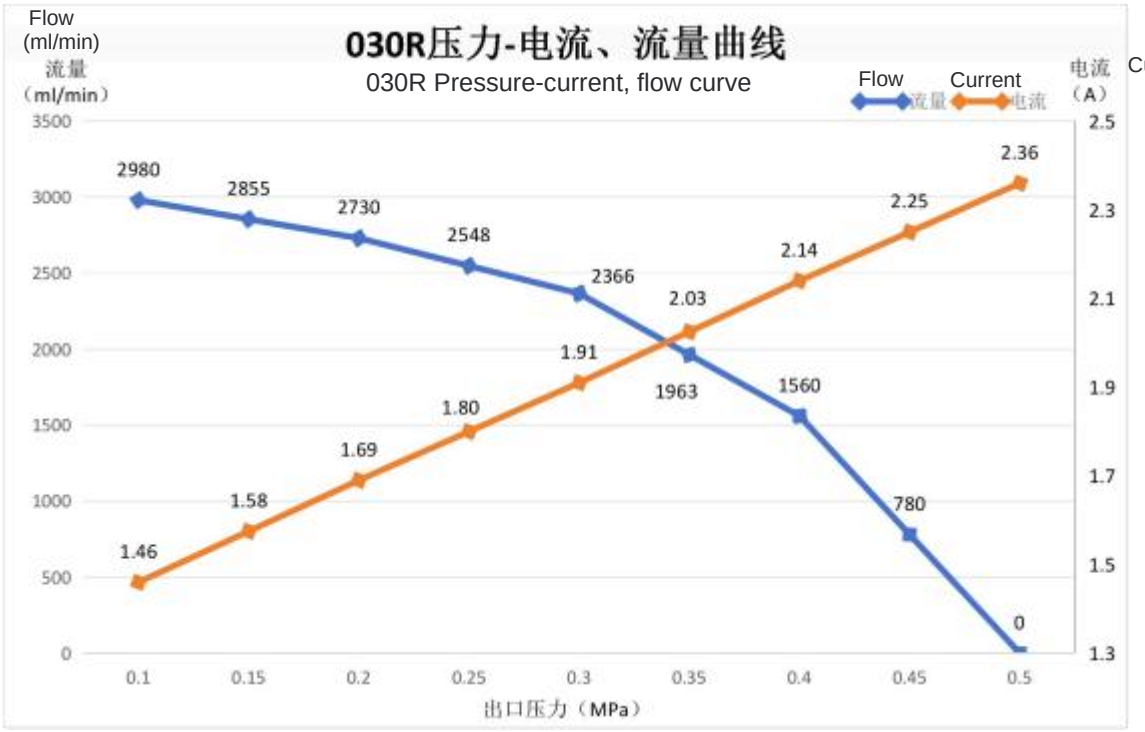


Option 2:

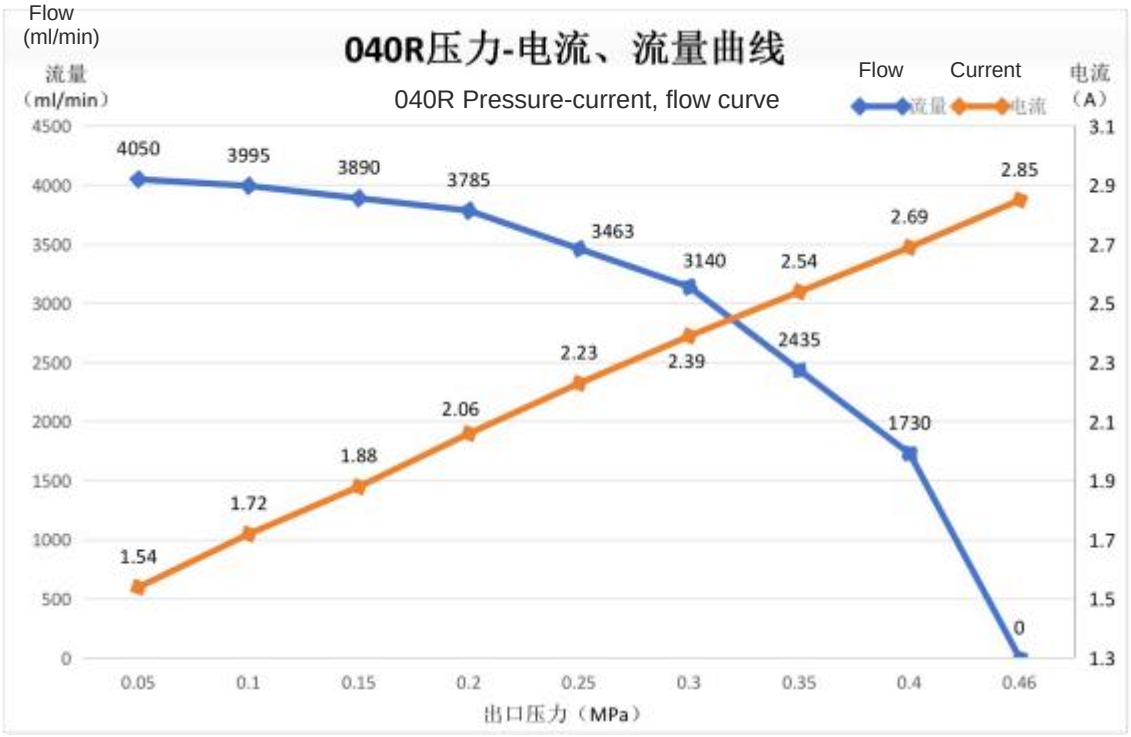
Use a solenoid valve to connect the pump outlet and pump inlet.
When the pump is powered on, the solenoid valve closes;
when the pump is powered off, the solenoid valve opens.



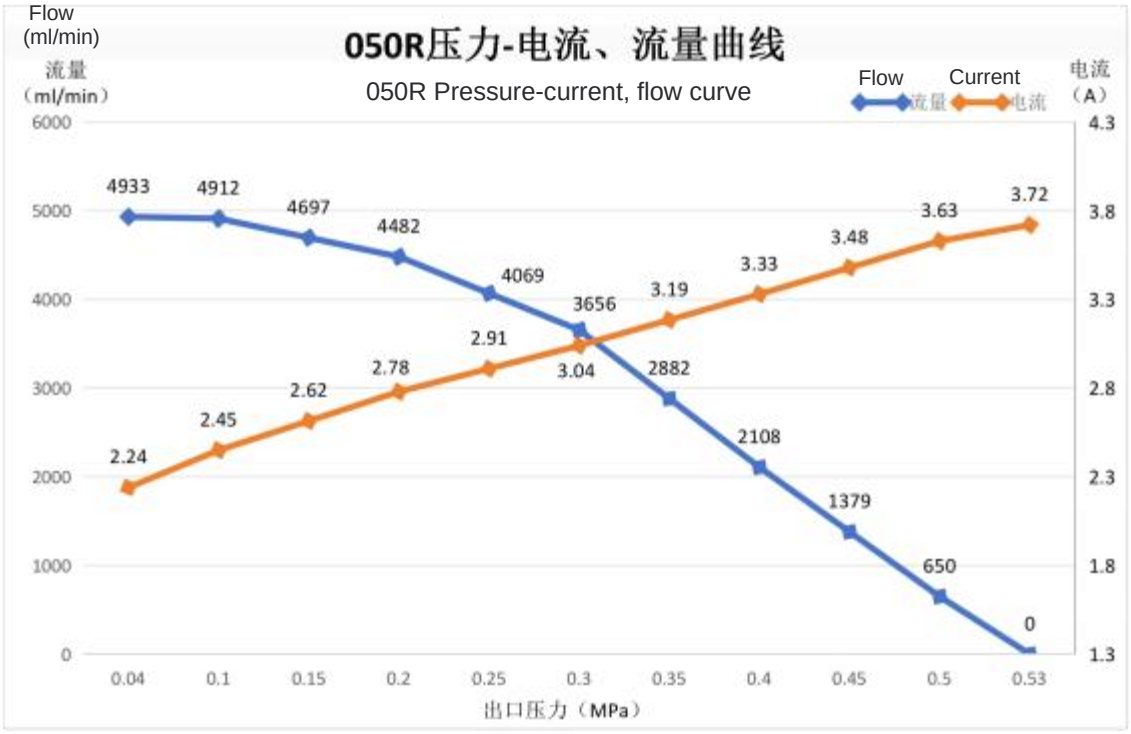
Pressure–Current and Flow Rate Curves
(Medium: water; tested at ambient temperature. The data are for reference only, and variations may occur between individual units.)



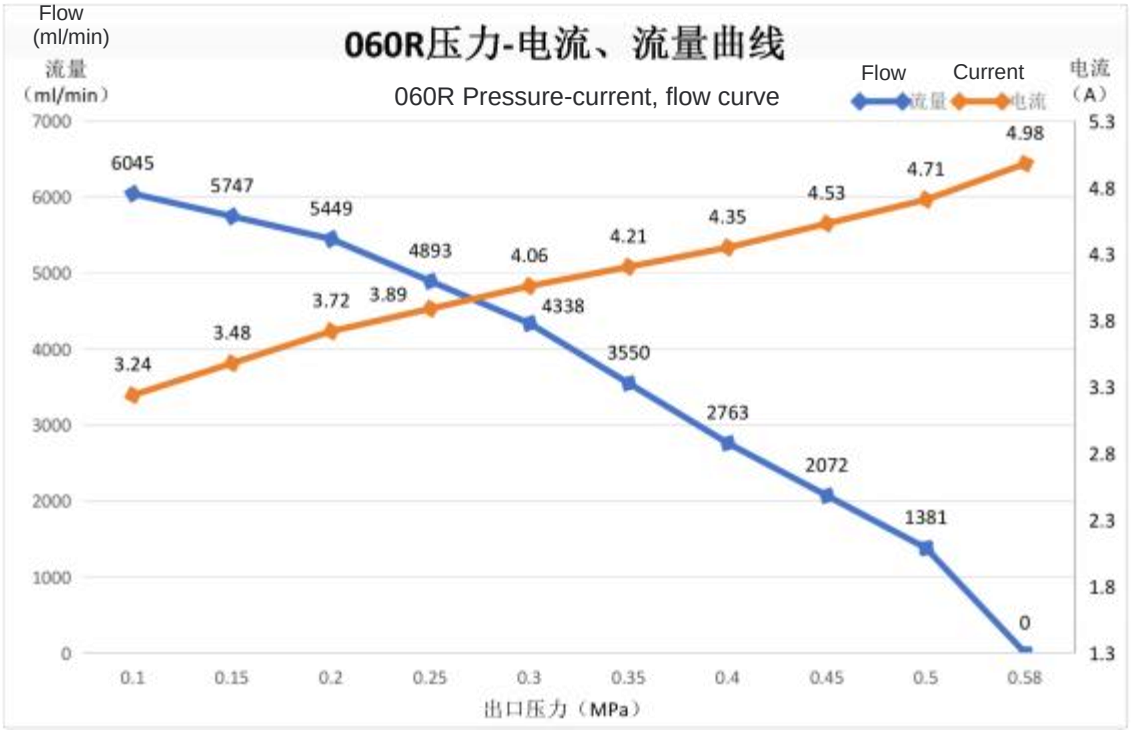
Outlet pressure (Mpa)



Outlet pressure (Mpa)



Outlet pressure (Mpa)



Outlet pressure (Mpa)