



## QX-13 Pump Features & Data Sheet

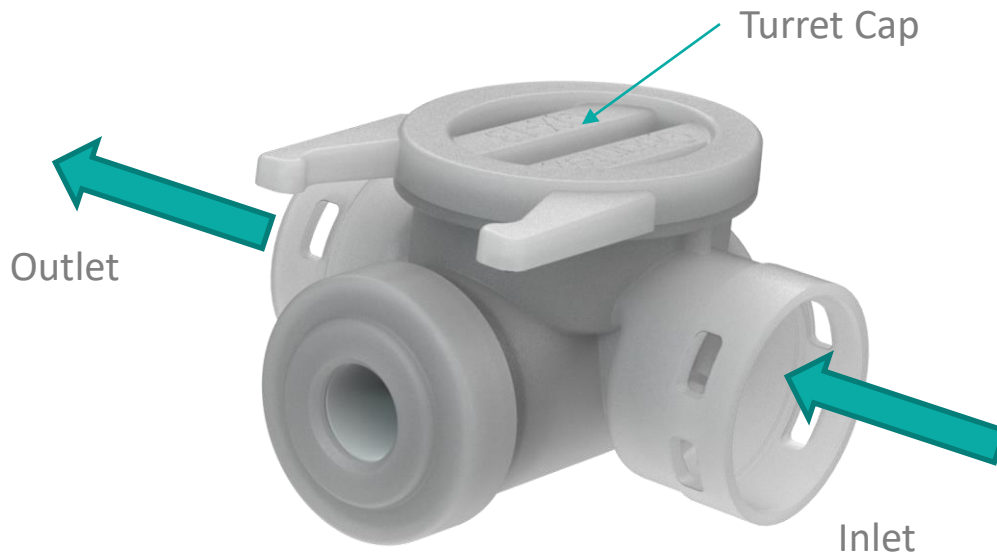
\*The data refers to pre-production samples



The QX-13 is a disposable pump available in:

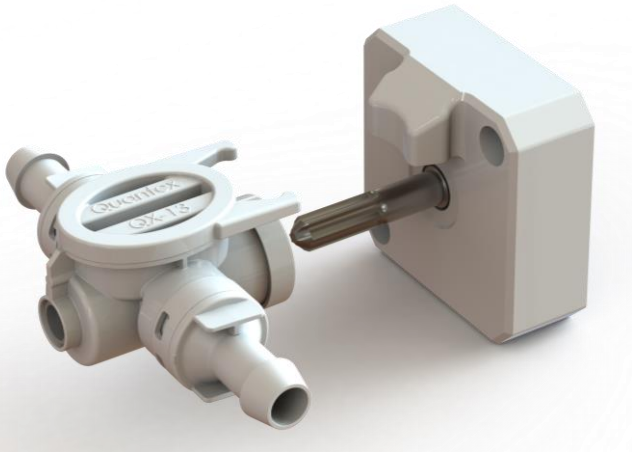
- Standard (QX-13 SD)
- High pressure (QX-13 HP)
- In-pump dilution (QX-13 DL)
- ECO (QX-13 ECO).

The figure below shows an external representation of the Standard and High-Pressure pumps with an indication of the main features.



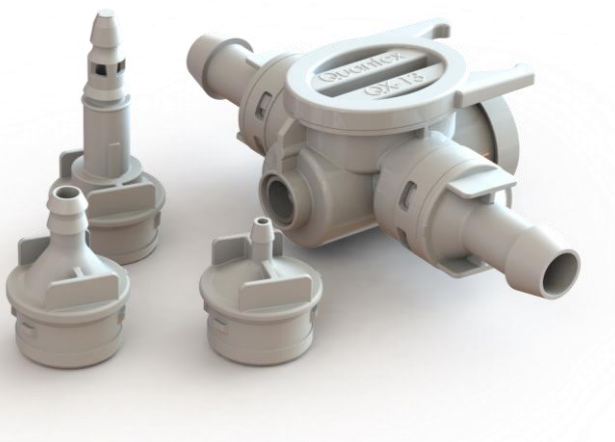
The Dilution and the Eco versions present a third input on the turret cap for in-pump dilution and air pressure activation respectively. For more information on these versions please contact a Quantex representative.

## Stable engagement with the motor



- ✓ Simple drive-to-pump engagement
- ✓ Enhancement of system stability

## Customized fittings for all needs



- ✓ Custom connection
- ✓ Adaptable to different tubing

The QX-13 pump is available with a two and a three-bolus rotor that allow to select the most suitable configuration for all applications. The table below shows the main mechanical features of the pump.

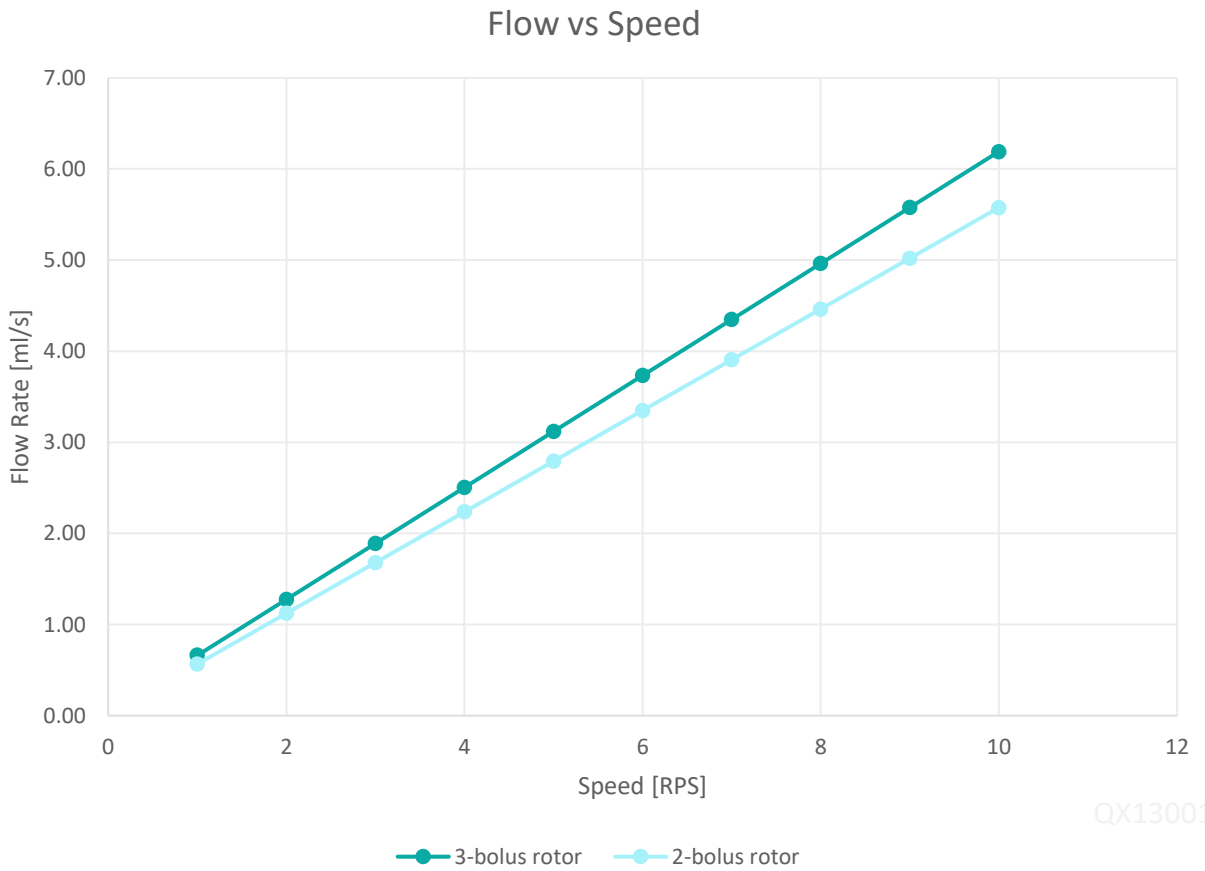
Mechanical Properties	Value	
Number of Boluses	2	3
Flow Rate per revolution <sup>(1)</sup>	0.56 ml	0.63 ml
Minimum Resolution	0.28 ml	0.21 ml
Baseline accuracy <sup>(1)</sup>	2.5% at 3SD	5% at 3SD
Speed Range	1 – 10 RPS	
Flow Rate	0.56 – 5.67 ml/s	0.63 – 6.36 ml/s
Max Pressure	72 PSI (QX-13 HP)	
Running Torque Range (Wet)	60 - 120 mNm <sup>(2)</sup>	
Max Start-up Peak Torque (Dry)	300 mNm <sup>(3)</sup>	

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QX13002

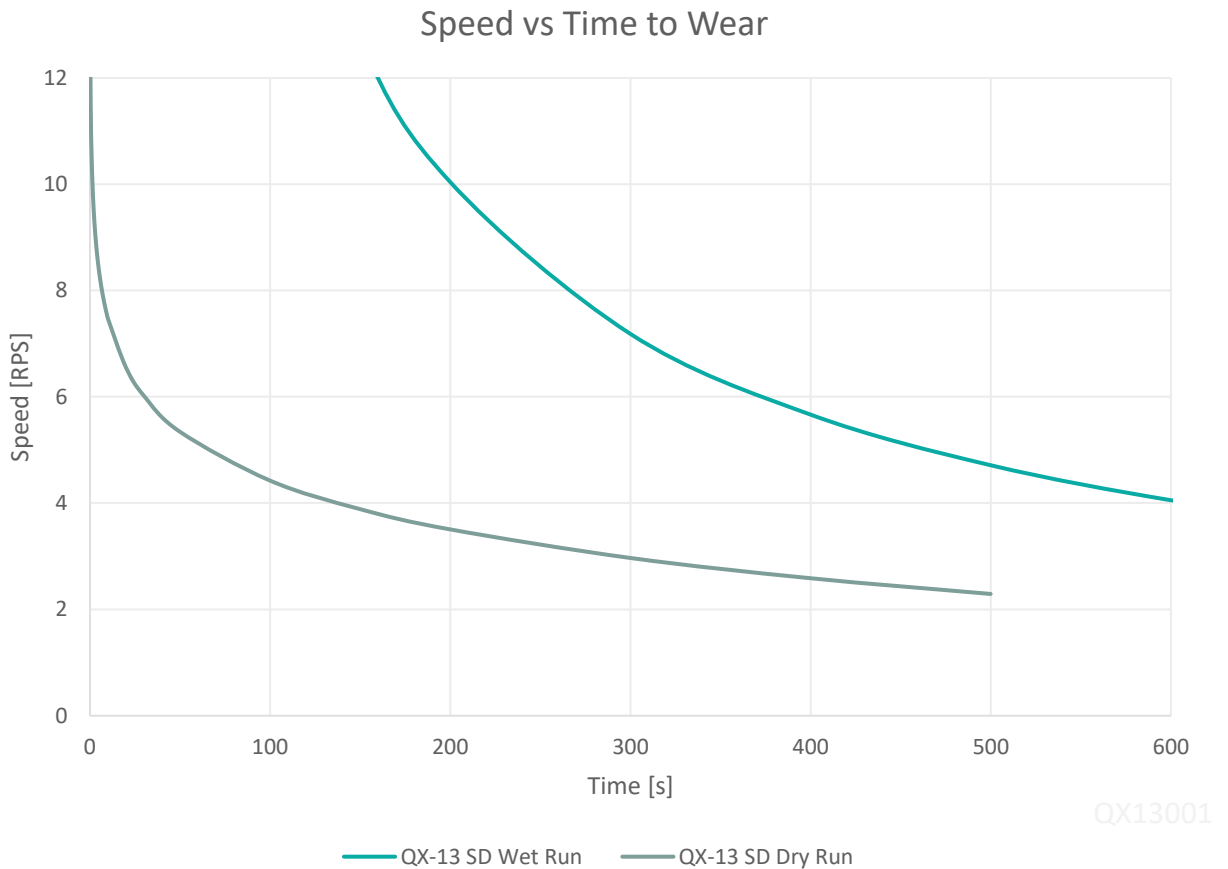
- (1) At 5 RPS with water and no backpressure. A variation in the operating conditions may affect accuracy.
- (2) The range represents an indication of the average torque required to run a QX-13 pump with water at 1 to 10 RPS. It may vary with different fluids and in presence of back pressure/restriction.
- (3) The value represents an indication of the maximum torque required to run a pump for the first time. The value represents the breakaway torque produced by the rotation in presence of a lubricant.

The following chart shows the flow rate performance of a Quantex QX-13 Standard Pump at different rotation speeds (RPS) with water. The graph reports the results for both 3-bolus and 2-bolus configurations.



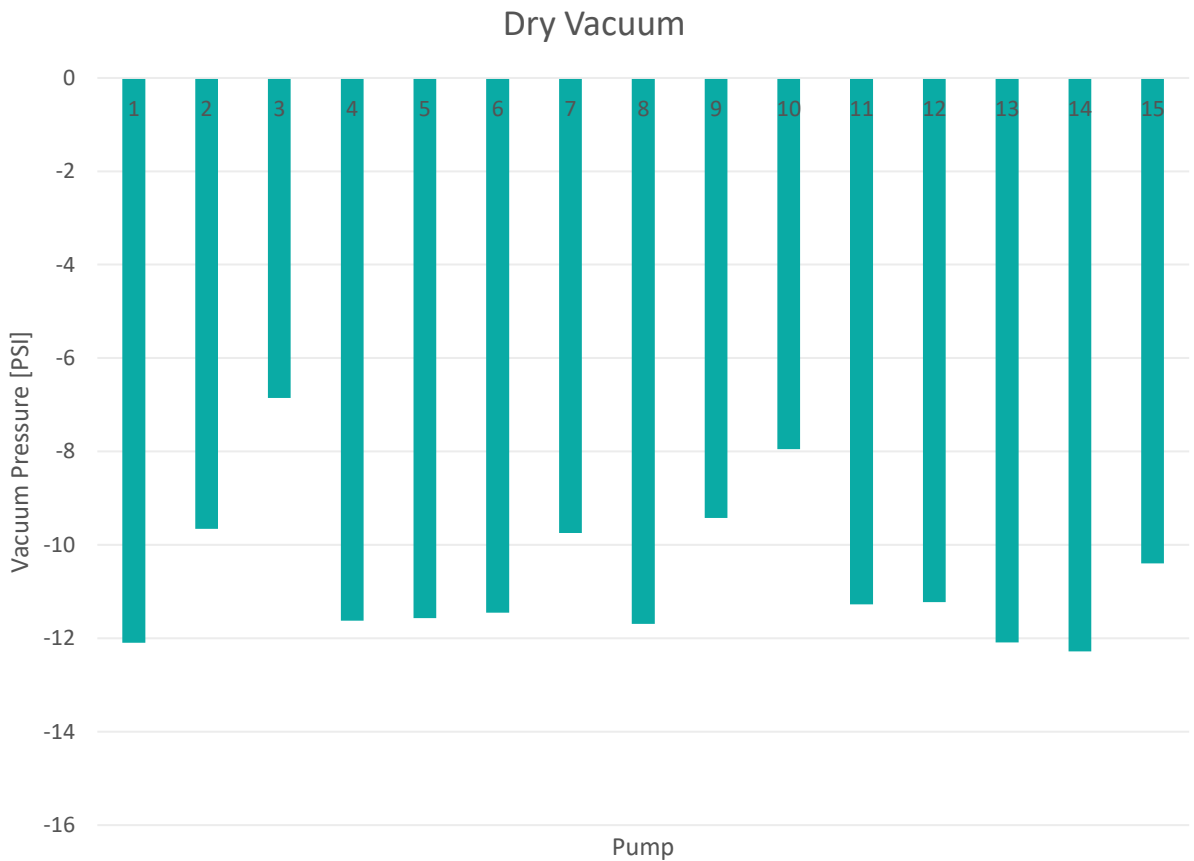
The following chart shows the duty cycle\* for a QX-13 pump for wet and dry running.

\*The maximum speed at which a pump can run continuously



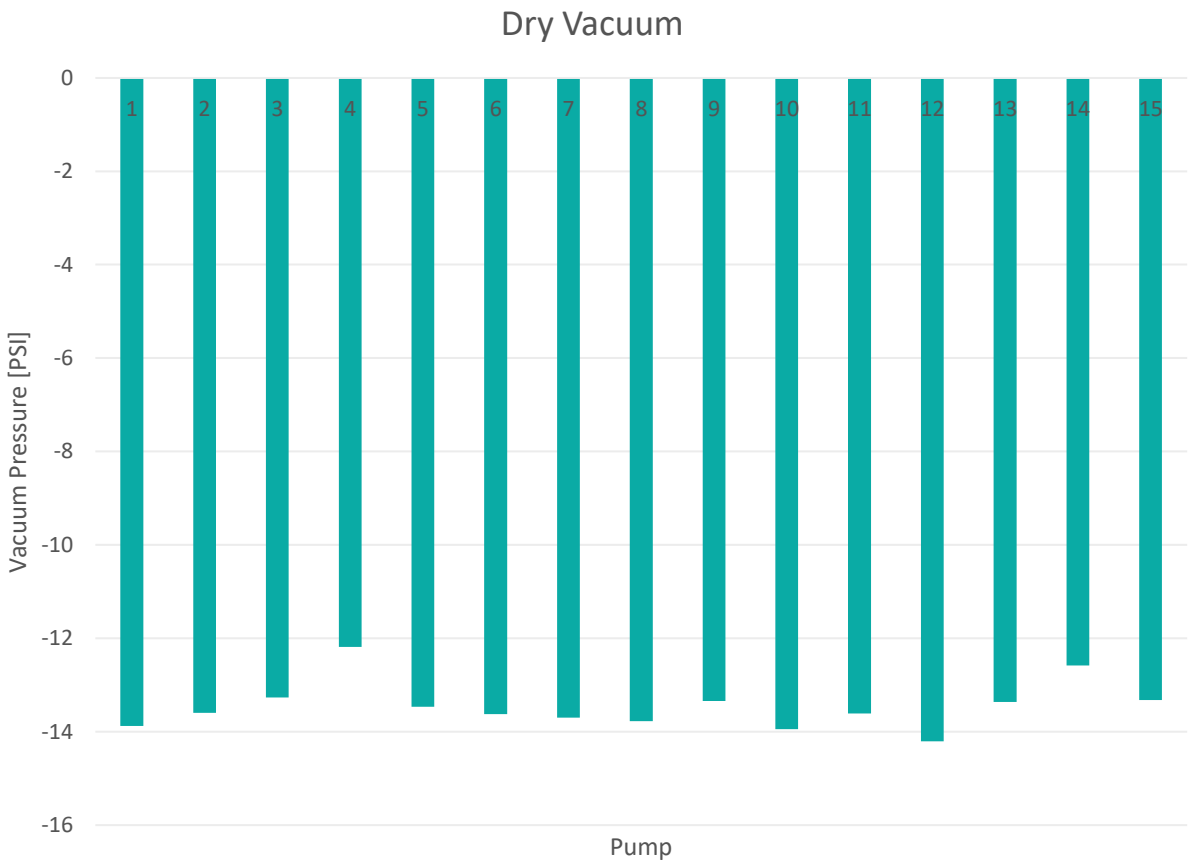
The curves obtained represent the worst case scenario where the pump’s rotor is not lubricated. In the presence of a lubricant, the recommended limits for duty cycle will increase.

The following chart shows the dry vacuum performance of 15 Quantex QX-13 Standard Pumps at 5 RPS. The data represent the maximum vacuum achieved during a 10 seconds run at the indicated speed.



QX13002

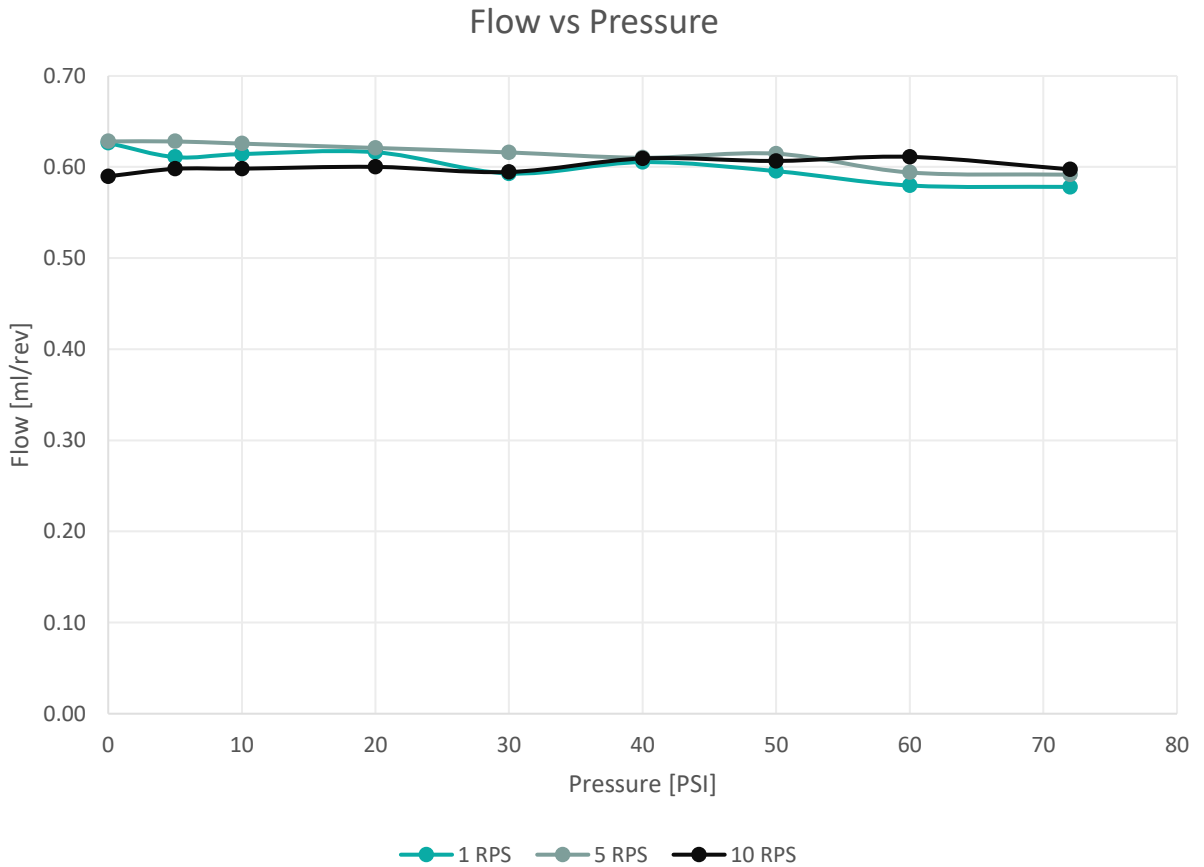
The following chart shows the dry vacuum performance of 15 Quantex QX-13 High Pressure Pumps at 5 RPS. The data represent the maximum vacuum achieved during a 10 seconds run at the indicated speed.



QX13002

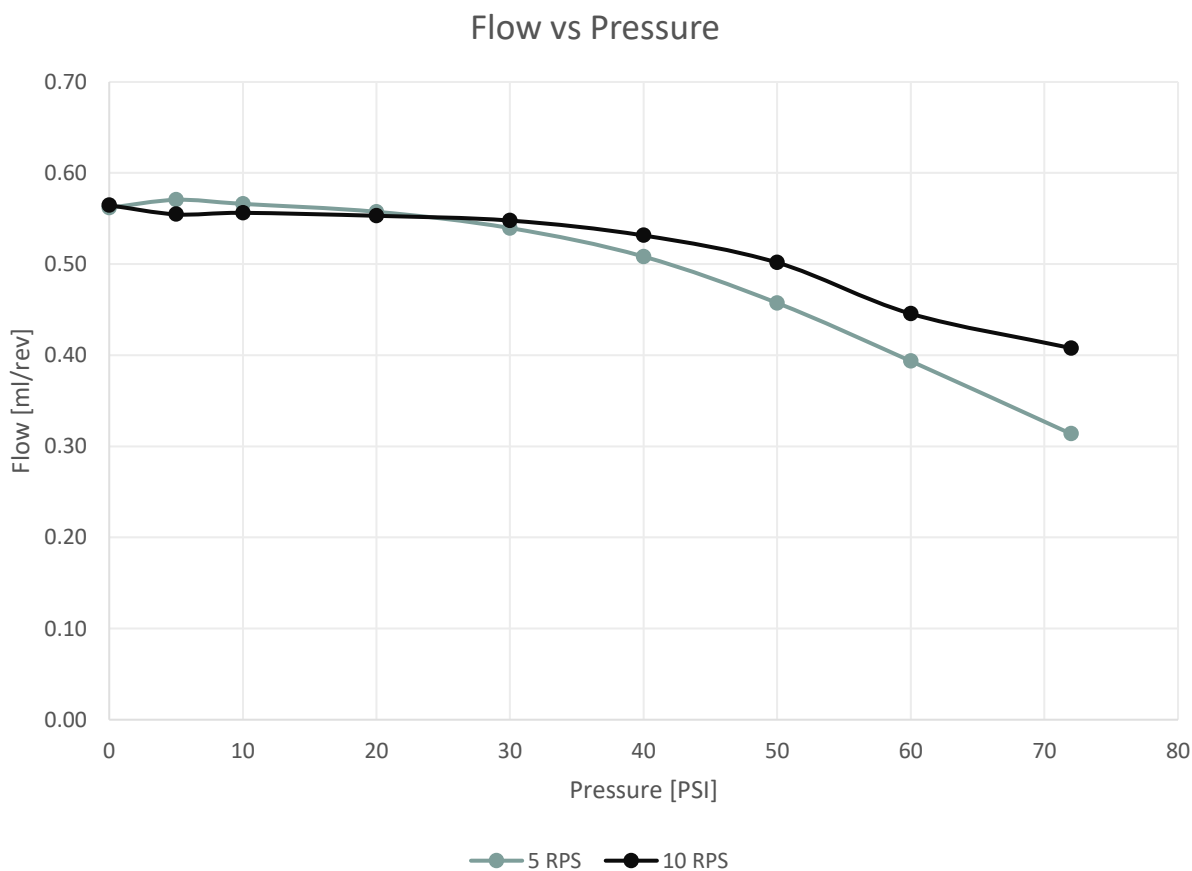


The following chart shows the pressure performance of a Quantex QX-13 High Pressure Pump with a 3-bolus rotor at different rotation speeds with water. Each data point reports the flow rate averaged during a 10-second run. The efficiency of the pump running at 5 RPS with 72 PSI of backpressure remains above 85% of the baseline.



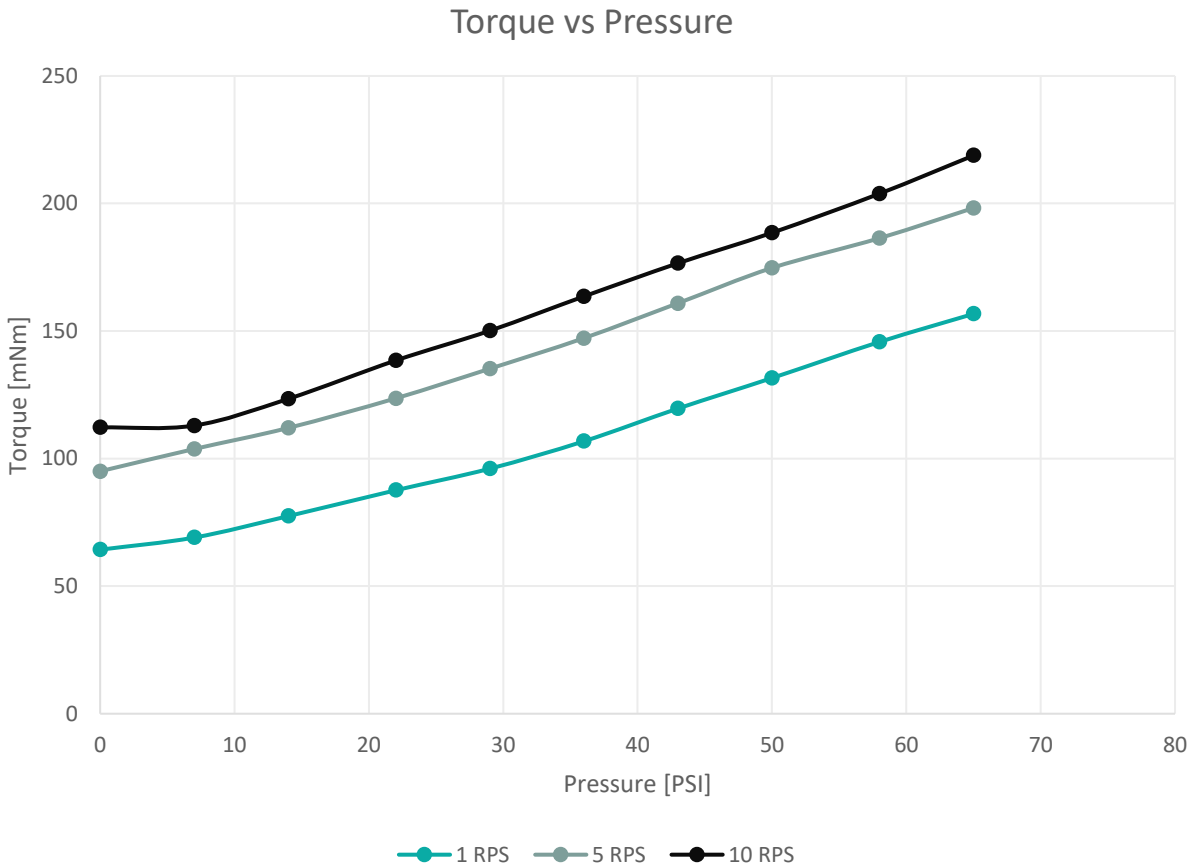
QX13002

The following chart shows the pressure performance of a Quantex QX-13 High Pressure Pump with a 2-bolus rotor at different rotation speeds with water. Each data point reports the flow rate averaged during a 10-second run.



QX13002

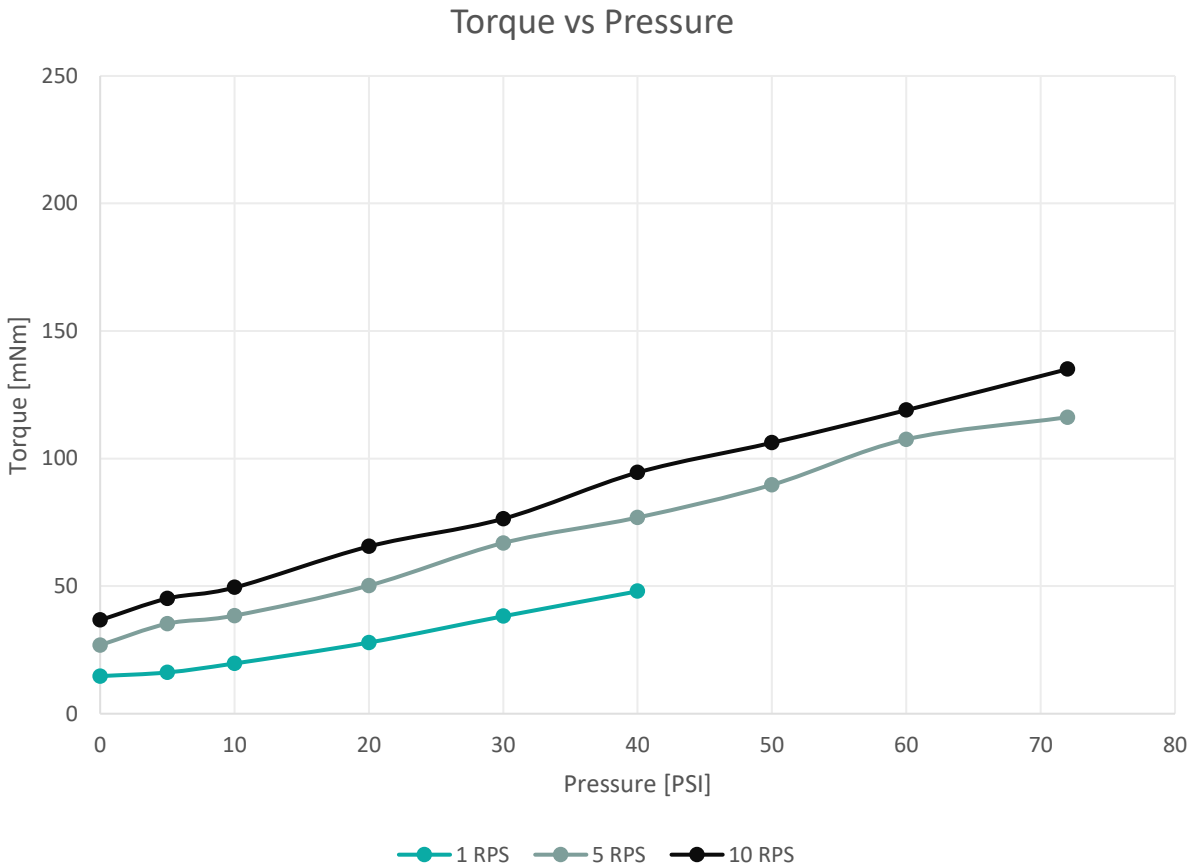
The following chart shows the average running torque of a Quantex QX-13 High Pressure Pump at different rotation speeds with water (wet running) with a 3-bolus rotor. Each data point reports a torque value averaged during a 10-second run.



QX13001

Data at intermediate speeds will fall upon the limits set by the 1 RPS and 10 RPS curves.

The following chart shows the average running torque of a Quantex QX-13 High Pressure Pump at different rotation speeds with water (wet running) with a 2-bolus rotor. Each data point reports a torque value averaged during a 10-second run.



QX13002

Data at intermediate speeds will fall upon the limits set by the 1 RPS and 10 RPS curves.