

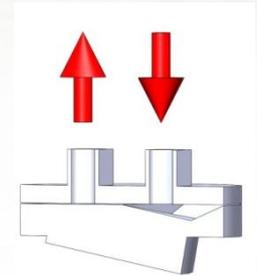


The “R” range of ‘Conical Revolution’ pumps.

Conical Revolution (R) pumps are a TCS innovation. They offer a completely new design of positive displacement pump, that works using a peristalsis principle

Working Principle

A flexible pumping chamber is deformed in a rotary motion. One side is under compression forming a seal, whilst the other side is lifted, creating suction. The rotating movement creates a fluid wave that moves around and through the pump.



Capabilities and Key Features

Reversible.

Resistant to abrasive particles.

The fluid is hermetically sealed (no dynamic seals or magnetic coupling is necessary).

Strong vacuum and great self-priming capability.

Resistant to ice pressure (pump is undamaged even if water freezes within the pump)

“R” Pumps can also replace valves: Optionally they can allow or prevent flow, when not rotating.

R400 RANGE

The 'R' pumps (a unique and patented technology developed by TCS Micropumps) combine an unrivalled combination of features and performance. These include :- Self priming, valve-less, dry running, reversible, small, quiet, robust, capable of pumping both liquids and gases and with good vacuum capability (90%+)

Customers currently interested in diaphragm or peristaltic pumps can find that the many features, benefits, performance, life and reliability of the “R” pump, can offer them a far superior solution.

R402 range

Powered by a TCS developed brushless drive unit, which is small, powerful, efficient and reliable. The body is constructed from CNC machined aluminum alloy, stainless steel 316 and utilises a special elastomeric pumping membrane.

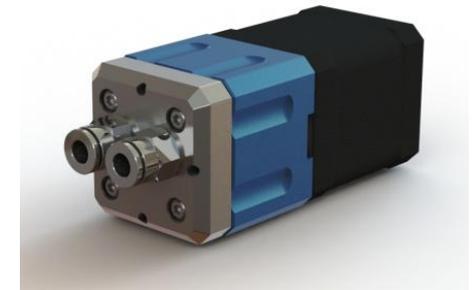
Can be supplied with various front plates including barbed tubing connectors or a flat fronted manifold pump, designed to fit directly onto the customers system.



R404-STEP

Utilising a new and improved version of the proven R402 pump-head, mated to a powerful, accurate and high speed stepper motor the R404-STEP adds a new level of flow control, dosing accuracy and valve capability.

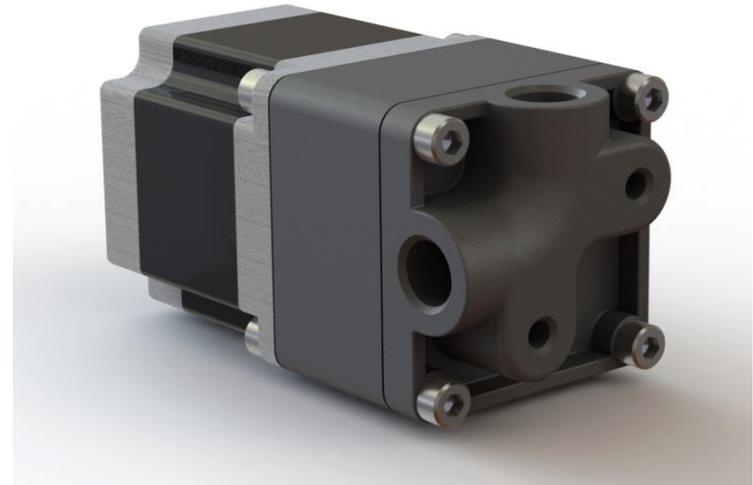
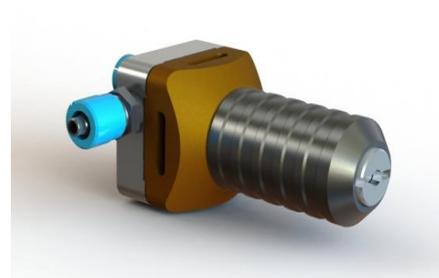
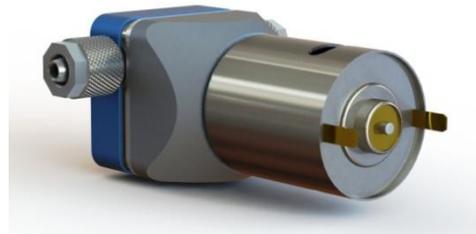
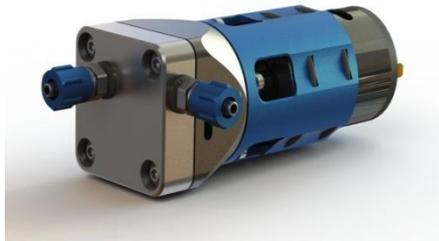
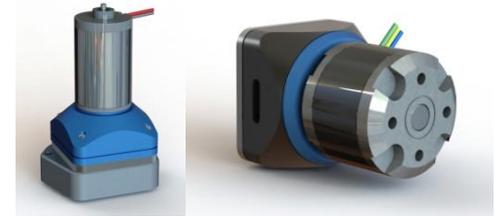
The ability to program the pump head to run at an exact speed and for a defined number of turns brings a new level of repeatable performance to the range.



Special Variants

All the standard 'R400 series' pumps can be supplied in a range of different wetted materials and port configuration.

A unique set of requirements that cannot be satisfied by a TCS stock "R" pump can be referred to TSO, the in-house R&D team at TCS who can develop a bespoke OEM system specifically tailored to the precise requirement of the customer.



TCS Micropumps test the performance and life expectancy of all pumps in house.

Unless otherwise specified all tests are run using unfiltered water, with the pump subjected to standard atmospheric pressure at 20-24deg C.

Note the life of all pumps can be increased by running at a reduced performance / power point.

Failure mode is defined as the point at which the pump is unable to deliver the set flow/pressure regardless of the power supplied

Maximum Performance Characteristics

Model	Voltage Range	Max Flow	Max Pressure	Max Power	Weight
R402	12-30V	400 mLpm	2 Bar	12W	166 grms
R404-STEP	12-30V	100 mLpm	4 Bar	35W	640 grms

Life expectancy under typical operating conditions

Model	Voltage	Flow	Pressure	Power	Life	Failure Mode
R402	12 V	400 mLpm	-0.2 Bar	5.5W	10,000+ hrs	Failure of flexible membrane
R404-STEP	24 V	100 mLpm	1 Bar	8W	10,000+ hrs	Failure of flexible membrane