



## SFT-25 Supercritical Fluid Pump



- Pressures up to 10,000 psi (68.9 MPa)
- Flow Rate up to 125 ml/min (pressure dependent)
- Stainless Steel Fluid Path
- Liquid CO<sub>2</sub> Peltier Chiller
- Pressure Transducer
- Constant Pressure or Constant Flow Mode
- Selectable Set Pressure or Set Flow Rate
- Optional Post Pump Heater Available
- Micro USB and RS-232 Serial Communications Port

◀ SFT-25 Supercritical Fluid Pump

The SFT-25 SCF Pump is a robust, high precision carbon dioxide pump designed to deliver liquid CO<sub>2</sub> up to 10,000 psi (68.9 MPa). The SFT-25 pump is capable of flow rates up to 125 ml/min and is ideally suited for preparatory scale supercritical fluid extraction (SFE) and supercritical fluid extrusion applications.

This supercritical fluid pump incorporates a high performance, dual-headed, positive displacement (piston) pump which rapidly produces the pressures required for supercritical fluid and other high pressure applications. Software safeguards protect from accidental over pressurization. The pressure and flow set points are controlled from a push button display located on the control module's front panel.

The SFT-25 SCF pump utilizes dual stainless steel pump heads, Furon seals and sapphire pistons. The cam-driven pump mechanism employs a single stepper motor drive, dual ball and seat check valves (ruby ball, sapphire seat).

The SFT-25 has a stainless steel fluid path and a pressure transducer in a "T" fitting. The pump's constant pressure mode (P/N 170290) features a selectable pressure set point. The flowrate automatically adjusts to maintain a set pressure. An optional constant flow version of the SFT-25 SCF Pump is also available (P/N 170296).

Pump head temperature is controlled by an integrated thermoelectric cooling module with finned heat sink, cooler and a fan. Cooling jackets and baths are not required. The liquid CO<sub>2</sub> is delivered to the SFT-25 SCF Pump between 0°C and -5°C. A quick-release mechanism allows easy access to pump heads for routine maintenance. Pressure transducer, filters, digital keypad, micro USB and RS-232 serial interface are standard.

# SFT-25 Supercritical Fluid Pump Specifications

## Pump Features

- Dual-Head Design: Stepper Motor belt-drive mechanism; HF style eccentric cams
- All Stainless Steel fluid path (except as noted), Head kit with Zirconia Pistons (0.3750" OD; 452.5 microliter/stroke @ 0.250" cam lift)
- Flow Rate Range: 0.1 – 125.0 ml/min (see performance curve, additional options available for higher flow rates)
- Pressure Capability: 0 - 10,000 psi (68.9 MPa)
- Flow Accuracy: Better than 2% across the flow range using Methanol (10 – 125.0 ml/min functional range)
- 1/4" Ball and Seat Check Valves on inlet (ceramic)
- 3/16" Ball and Seat Check Valves on outlet (ruby ball, sapphire seat)
- Insulated inlet line with true "Y" fitting to pump heads
- Pressure Transducer/Tee Assembly
- Micro USB and RS-232 Serial Communications Port for control/status interface
- Inlet Bulkhead – 1/4" CPI male fitting (on back of pump)
- Outlet Bulkhead Filter (10 micron) – 1/8" LP gland/ferrule
- Constant flow or pressure algorithm
- Start-up kit and accessories

**Back Panel Output:** Normally open and normally closed relay contacts (SPDT, form C, 0.25 amp max, 50 volt max) indicate if a pressure fault or motor stall fault occurs

**Pulsation:** +/- 1% at 12 ml/min using 100% Methanol at 1,000 psi

## Standard Configuration

**Flow Rates:** 0.1 to 125.0 ml/min (pressure dependent)

**Pressure Range:** 0 to 10,000 psi (68.9 MPa)

**Pressure Accuracy:** +/- 2% of full scale pressure

**Pressure Zero Offset:** - 0 psi + 10 psi

**Flow Accuracy:** +/- 2% using 100% Methanol at 1,000 psi

+/- 5% using CO<sub>2</sub> (Based on gas volume measurements and back calculation to liquid)

**Flow Precision:** 0.5% RSD using 100% Methanol at 1,000 psi

**Dimensions:** 6.9" high x 12.1" wide x 15.0" deep (17.5 x 30.7 x 38 cm)

**Weight (Pump & Pre Chiller):** 45 lb (20.4 kg)

## System Requirements

**Power Requirements:** 220 VAC, 50/60 Hz, 15 amps

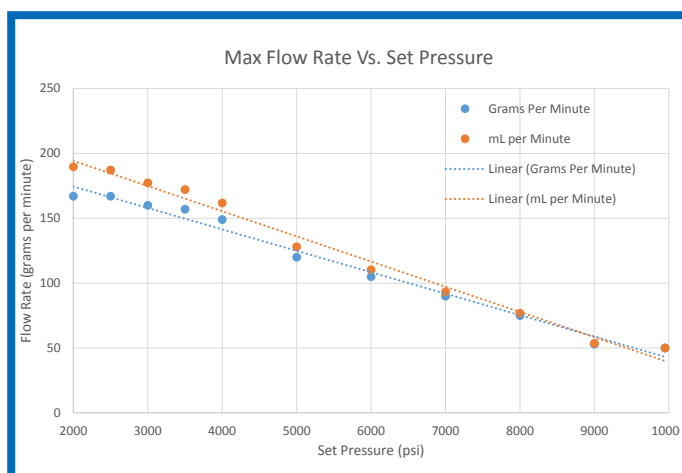
**Gas Supply:** Liquid CO<sub>2</sub> cylinder with dip tube

**Parts Numbers:**

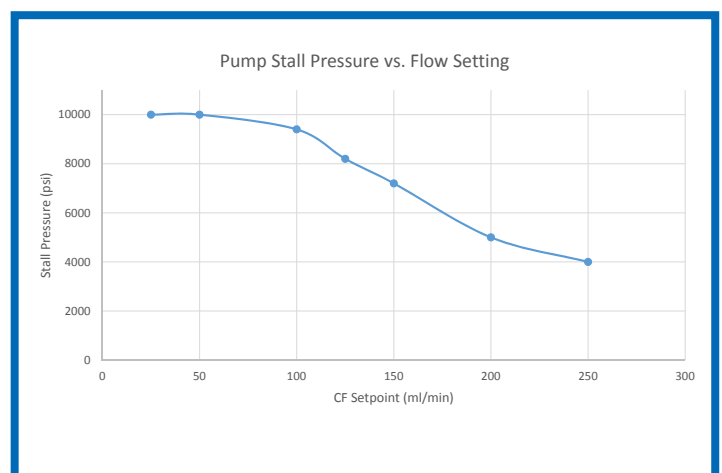
SFT-25 Constant Flow Mode P/N 170296

SFT-25 Constant Pressure Mode P/N 170290

\*Includes peltier chiller and all tank to pump connections, (1/4" CPI fittings) outlet fitting (1/8" LP gland/ferrule) and 1/8" tubing



Constant Pressure Performance Curve



Constant Flow Performance Curve