

**C-Series (Low-Flow Coreless Gear Pumps)**

# MODEL 2022-C11/C13/C16

# 2022-C11/C13/C16

**Made in the USA**
**DESCRIPTION**

Flight Works C-Series (Low-Flow Coreless) Gear Pumps are designed to meet the performance and reliability requirements of a wide variety of industries and applications. The 2022-C11/C13/C16 models use precision-machined parts and a high-torque, low-speed brushed motor to produce low flow rates with extremely low power consumption and noise. Available encoder options and tightly toleranced components offer precision and reliability, all in an extremely small size and weight.


**STANDARD SPECIFICATIONS**

Diff. Pressure (Max)	.....	Up to 180 psi
Flow Rate	.....	Up to 195 mL/min
Weight	.....	70 grams
Fluid Temp.	.....	0° C to 85° C
Std. Port Size	.....	M3 x 0.5 Threads
Std. Voltages	.....	6V (C11), 12V (C13), 24V (C16)
Permissible Fluids (P/N Specific)	.....	Light & Heavy Fuels/Oils (e.g. Kerosene), Water, Alcohols, Solutions, etc.
Control Options	.....	Open-Loop Control (Voltage) Closed-Loop Control (RPM/Current) (Encoder Required for Closed Loop)

**APPLICATIONS**

All Flight Works micro gear pumps feature a level of versatility and customization that allows for use in a wide field of applications, including:

- UAVs
- Fuel Cells
- Instrumentation
- Laboratory Experiments
- Medical
- Aerospace

**▲ IMPORTANT**

**This pump is designed to run with an inlet filter (25 microns or better), and should NOT be run dry for extended periods of time.**

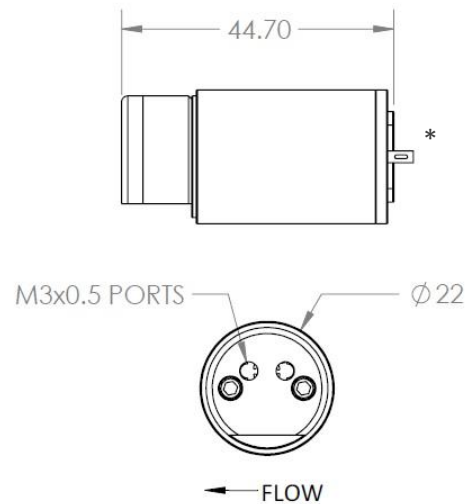
NOTE: This pump is a precision unit, built and assembled as a complete product. Opening or dropping the pump can permanently damage assembly integrity. Specifications are for informational purposes only and may vary depending on the system in which the pump is integrated. Flight Works, Inc. makes no warranties concerning the suitability of this pump for a particular application; as such, it is the customer's responsibility to determine the safety and technical suitability of the system. Specifications subject to change without notice.

## CONSTRUCTION OPTIONS

PART	LIGHT OIL CONFIGURATION	WATER CONFIGURATION	OPTIONS
PUMP HEAD	Anodized Aluminum	Anodized Aluminum	Stainless Steel
GEARS	416 SS & Hardened 420 SS	17-4 SS	PEEK Plastic PTFE-Filled Delrin Glass-Filled PTFE Bronze
IDLE PIN	Alloy Steel	Ceramic	Heat-Treated SS
SEALS	Viton	Viton	Buna Nitrile EPDM
FITTINGS	Barbed	Barbed	Push-to-Connect Compression
MOTOR	Standard	Standard	Encoder Strain-Relief Wiring Ball Bearings

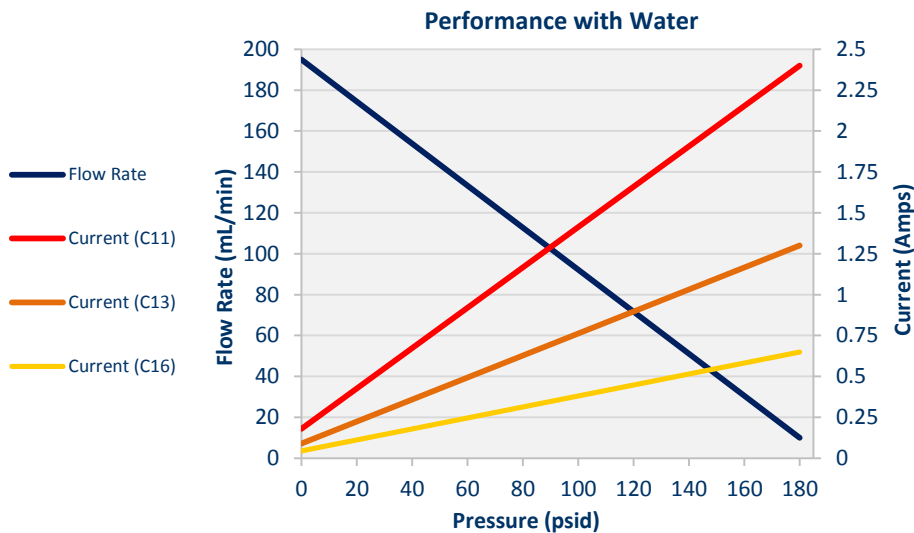
*Custom configurations can be designed upon customer request  
(Ex. custom cover designs, welding, custom wiring, etc.)*

## DIMENSIONS (mm)



\*Positive and negative solder tabs on motor (for 20 AWG wires)

## PERFORMANCE CHARTS



## COMMON ACCESSORIES (Contact Flight Works to Purchase)

### FLOW SYSTEM ITEMS

- Filters: 10, 25, 50 Microns
- Fittings: Tee/Elbow/Y/Adapters
- Valves: Ball/Check/Needle

### CONTROL COMPONENTS

- Coreless Encoder Control Package
- Pressure Gauges/Regulators

### TUBING

- Polyurethane Tubing: 3, 4, 6mm
- Tygon Tubing: Medium, Large
- Stainless Steel Tubing: 1/16", 1/8"

PDS005-N/C