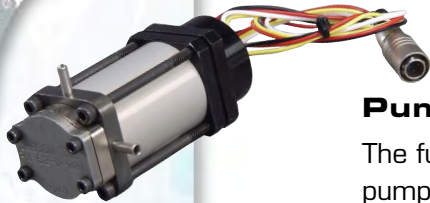


Turbojet Engine Powered Military UAV

A family of turbojet engines rated from 30 lbf to 100 lbf thrust, designed for a range of expendable, unmanned military air vehicle applications. The simple, low-cost design uses high production turbocharger rotating components, radial compressors, radial turbine wheels, and annular combustors. The combustion system permits the use of a wide variety of low and high volatility fuels. The fuel system features an electronically controlled, precision metering pump developed by Cascon that provides metered fuel flow for engine operation and for cooling the internal engine components and bearing lubrication.



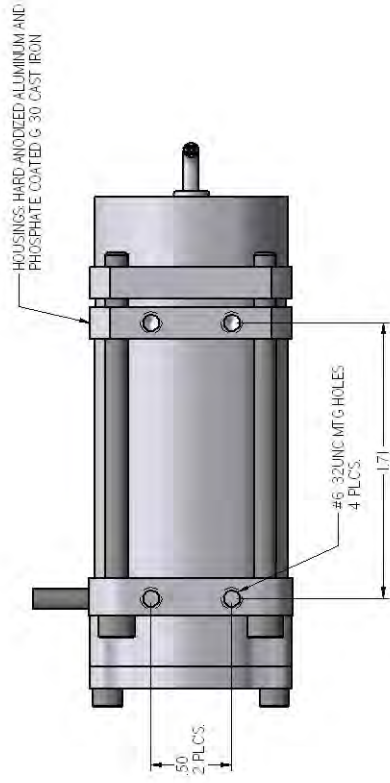
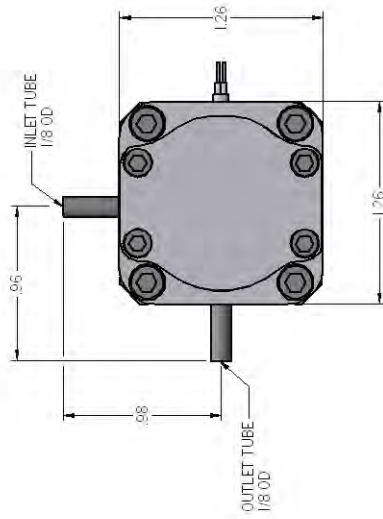
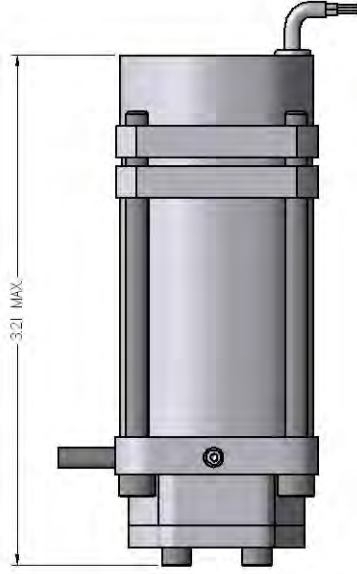
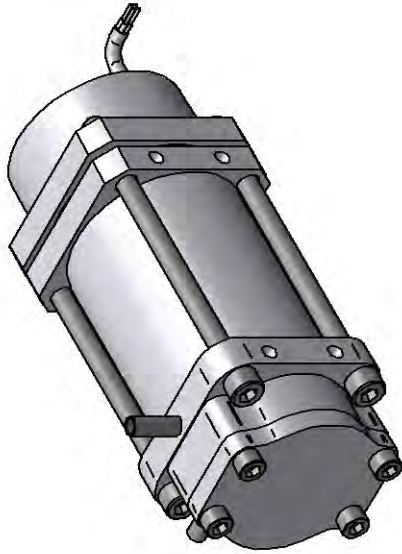
Pump Description:

The fuel metering pump assembly consists of a high efficiency positive displacement pump and permanent magnet brushless DC motor with integral drive electronics. The rotor is manufactured from tool steel and is housed in a cast iron eccentric ring. The rotor and motor share a common shaft that is made from hardened steel and is supported by pre-greased sealed ball bearings. Pump and motor housings are machined from heat treated aluminum. Fuel flow is controlled via a 0-5 VDC input command. The pump can run either in an open-loop configuration, relying strictly on the proportionality of speed to flow, or in a closed looped configuration with direct feedback from the ECU.

Selected Performance Data:

Fluid	JP-4, JP-8, JP-10
Flow Rate	2 – 80 pph
Discharge Pressure Range	10-80 psig
Inlet Pressure Range	8 – 25 psia
Flow Metering Accuracy	+/- 5 %
Temperature range	-40 °F to +180 °F
Transient Response	Min to Max in <1.0 sec
Operating voltage	22 – 32 vdc (28 vdc nom)
Weight	10 ounces
Construction	Semi-hermetic aluminum assembly
Storage life	10 years





CASE STUDY CS-062 FUEL METERING PUMP