

University of Maine Black Bears



2008 Clean Snowmobile Challenge

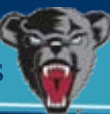
Yamaha Phazer

- Purchased fall 2006
 - 2007 Model Year
- Sporty
 - Agile Handling
 - Bold Exhaust Note
 - Aggressive Styling
- Affordable 4-Stroke



Basic Modifications

- Nylon Reinforced Clutch Cover
- Brake Rotor Shield w/Integrated Battery Shelf
- 3-Piece Cowling
- 3-way Catalyst & Exhaust Outlet Redirection
- Mass-Loaded Sound Proofing
- Fiberglass Fuel Tank
- Flex-Fuel System



Range

- Fiberglass Fuel Tank
 - Create Plug
 - Form Mold
 - Make Halves
 - Seal Tank
 - Finish
- Capacity
 - Originally 8.4Gallons
 - Currently 13.3Gallons



Range

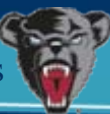
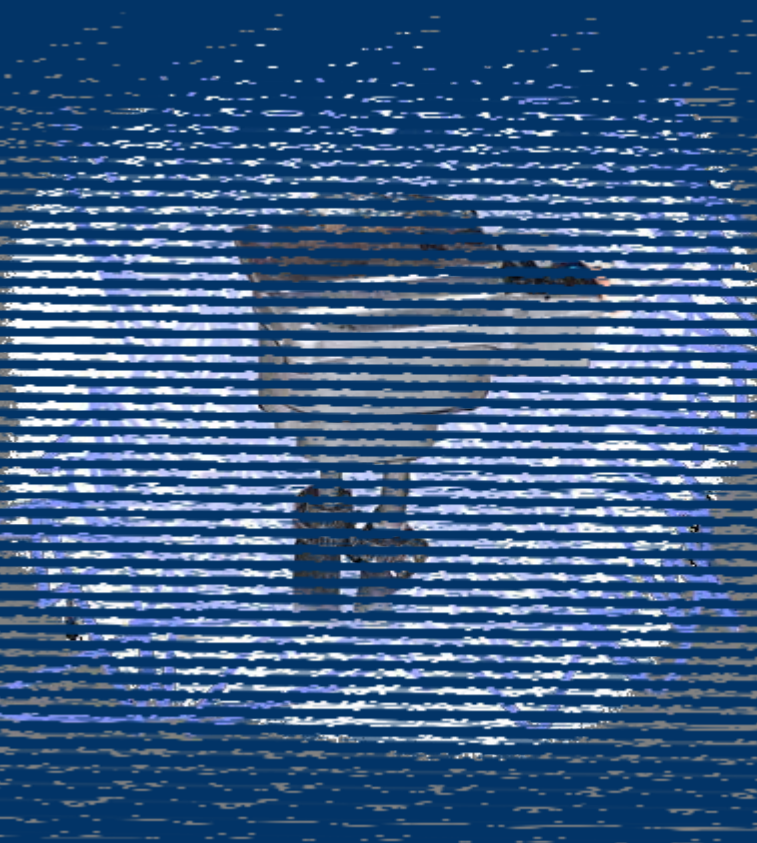


Fuel Tank Size Comparison



Flex-Fuel

- Sensor
 - Taken from GM Vehicle
 - Uses Dielectrics
 - Mounted in-line
- Fittings and Hoses
- MegaSquirt ECU
 - Programmable
 - Reads Flex-Fuel Sensor
 - Easy for Operator



Engine Control

- MegaSquirt
 - Complete Engine Control
 - Reads Flex-Fuel Sensor
 - Adjusts from O₂ Levels
 - Uses Existing Sensors
 - Ford EDIS
 - Works with Windows PC
 - Provides Gages



Engine Control



Ford EDIS

- Electronic Distributorless Ignition System
 - Bridges MegaSquirt and Ignition Coils
 - Allows MegaSquirt to work with coil-on-plug ignition
 - Institutes 9000 RPM rev limiter
 - Lifted from 1.9 liter Ford 4-Cylinder
 - Modified for Yamaha Odd-Firing 2-Cylinder
 - Provides Crankshaft Position Signal



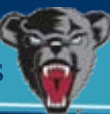
Noise Reduction

- Insulation
 - Three-Piece Cowling Sealed
 - Mass-Loaded Foam
 - Clutch Cover
- Muffler
 - Repacked
 - Routed to Tunnel



Competition Snowmobile

- Flex-Fuel Vehicle
 - Adjusts for Gasoline/Alcohol Mix
- Fully Tunable
- Bold Exhaust Note
- Aggressive Styling
- Long-Range Fuel Tank



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