



Welcome

SAE International™

University of Wisconsin - Platteville



Presented by:
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Flex Fuel Ski-doo



weight XP chassis

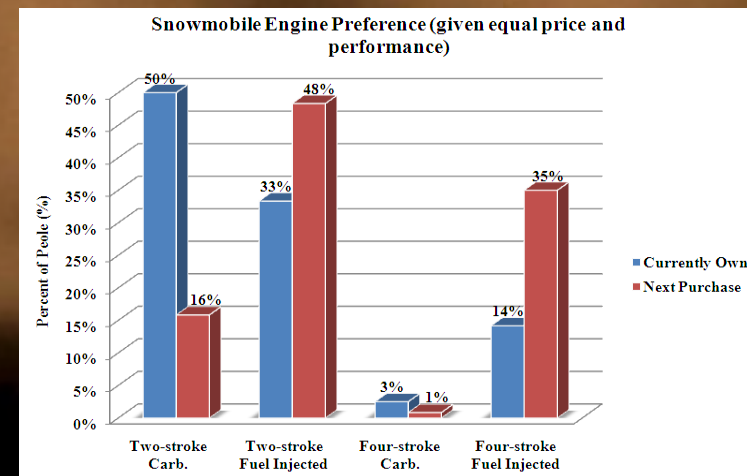
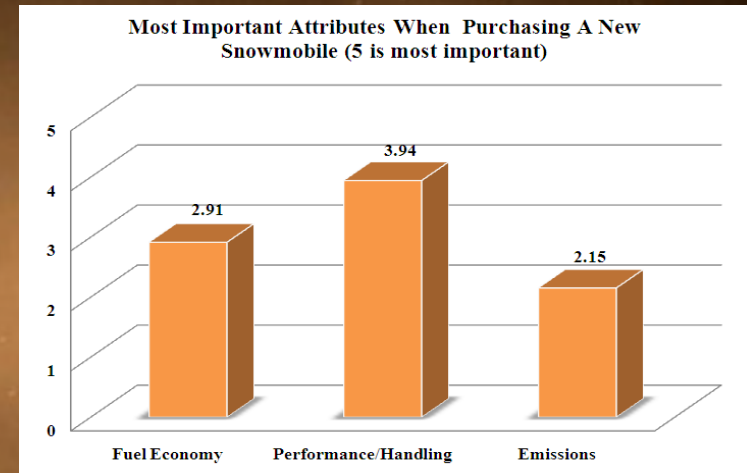
tem Direct Injected (SDI) 600cc 2-

UW-P CSC Design Goals

- Flex Fuel compatible
 - Tuning/calibration
 - Fuel System Upgrades
- Quiet
 - Sound deadening material (panels and engine intake)
 - Exhaust design
 - Ceramic coating
- Clean
 - 4 way catalyst
 - MicroSquirt
 - closed loop oxygen sensor
 - Auto tune
 - 2ndly
 - Electric start
 - Cruise
 - Mic rider position
 - Performance oriented

Design Considerations

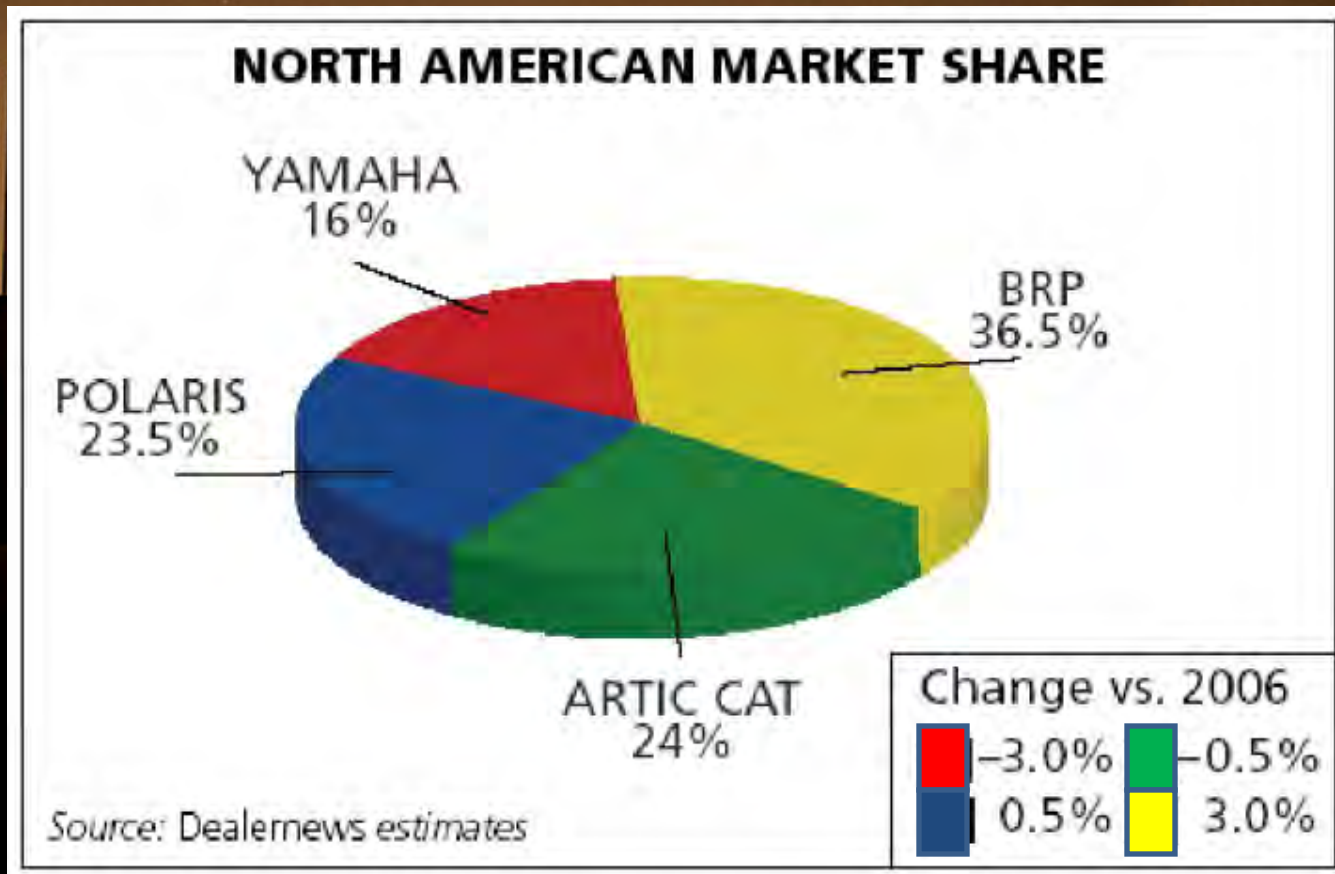
- Hard Core Sledder (HCS) survey
 - 105 Snowmobile enthusiasts surveyed
 - Consumers showed highest demand for:
 - Performance
 - Handling



Hard Core Sledder Survey

- 105 Snowmobile enthusiasts surveyed
- Consumers showed future interest in:
 - Fuel injected two-stroke snowmobiles
 - Fuel injected four-stroke snowmobiles

- Market Share breakdown:
 - BRP (Ski-Doo) dominates



4-Stroke versus 2-Stroke

- Fuel Consumption on E-85
 - 2008 UW-P 2-stroke: 12.97
 - 2008 CSC best 4-stroke: 14.27
- Power to Weight Ratio
 - 2009 UW-P 2-Stroke: 0.20 hp/lb
 - 2008 Top Four Stroke: 0.17 hp/lb

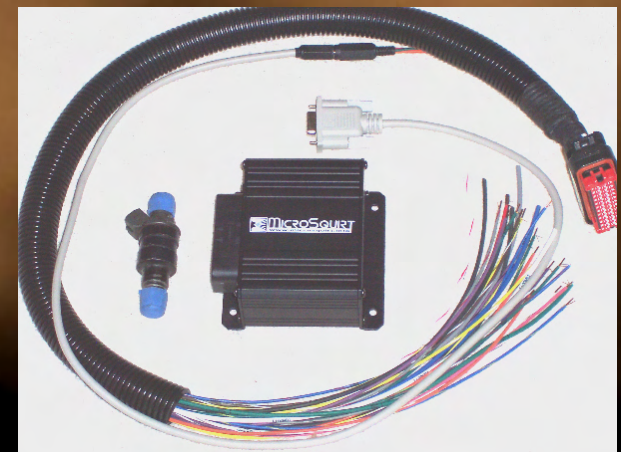
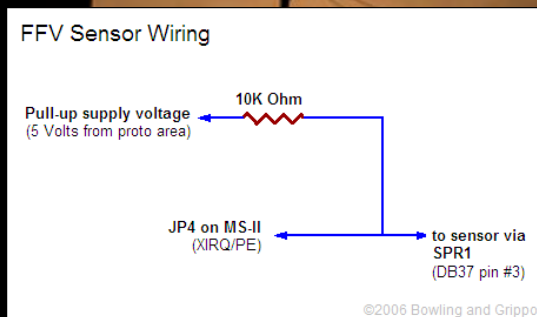
Chassis and Engine

- Chassis
 - Ski-Doo Rev XP
- Engine
 - Rotax 594cc H.O. SDI
 - Two-stroke
 - Loop scavenged, semi-direct
 - Intake port with reed valve with tuned
 - Exhaust pipe
 - Rotax advanced variable
 - Valve timing system (R.A.V.E.)
 - High power-to-weight



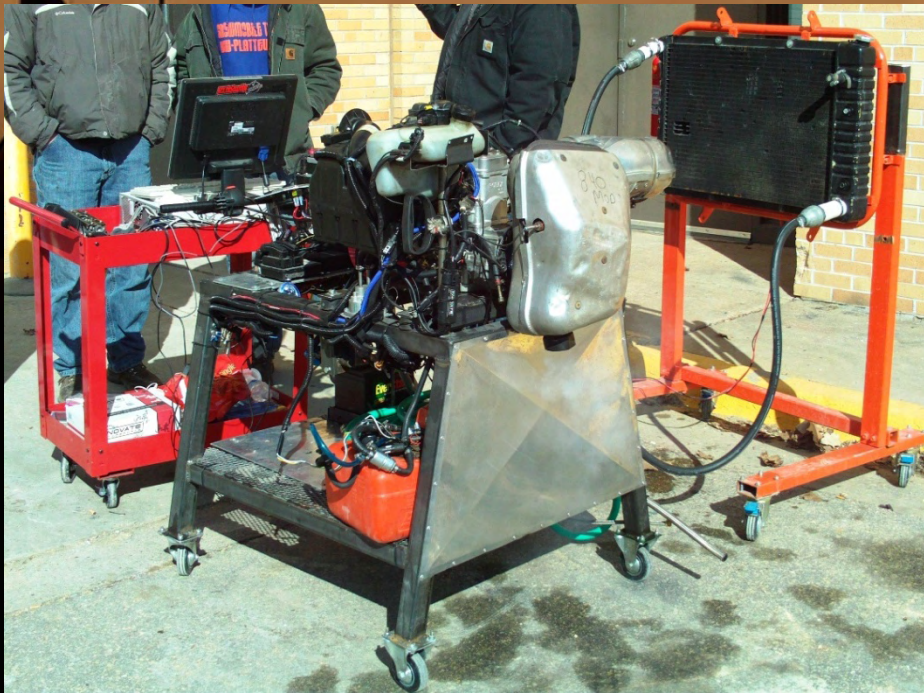
Fuel Delivery Management

- MicroSquirt
 - Fuel injection controller
 - Code written in the C programming language
 - Closed loop oxygen sensor feedback
 - Incorporates Continental Flex Fuel Sensor



Fuel Delivery Calibration

- Test engine
- DYNomite dynamometer



Engine Optimization

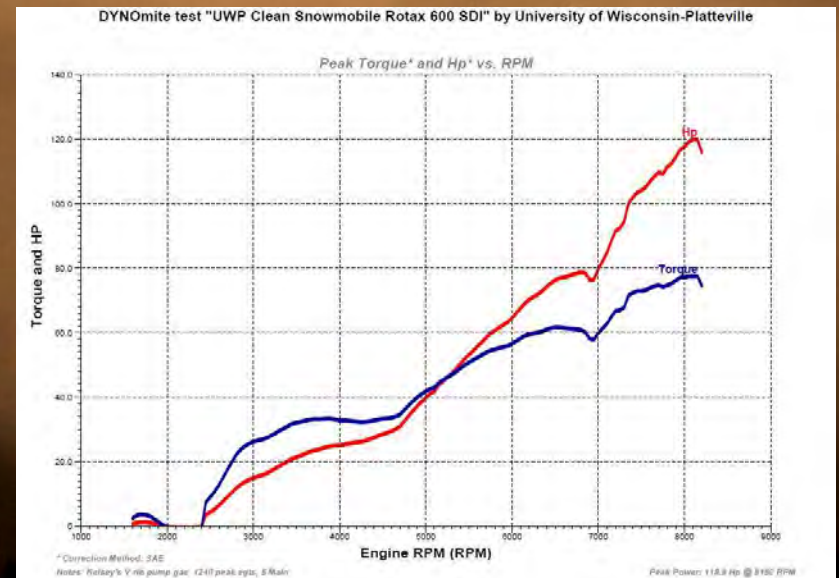
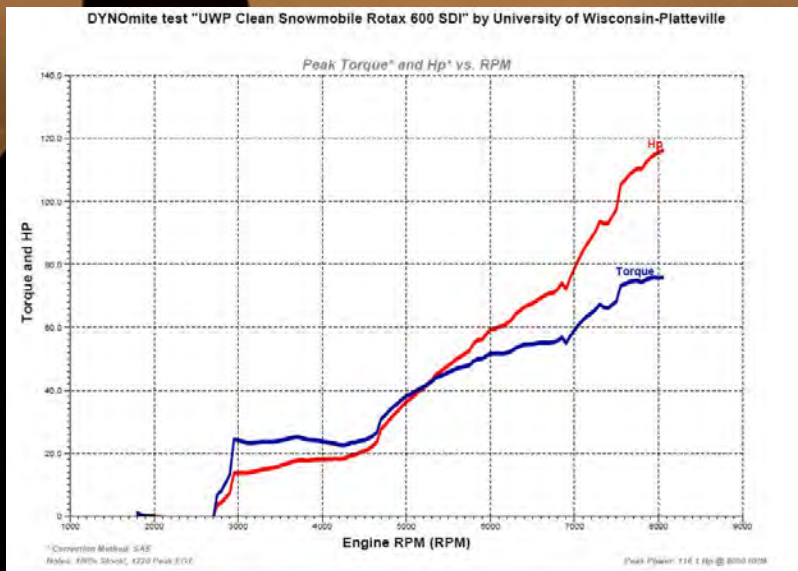
- RK-Tek cylinder head
- Radial ribbed domes
 - Pump gas, 2-3 peak hp, 10 % less fuel



Stock Vs RK-Tek Pump 93 E10

- Stock
 - Peak HP 116.1

- RK-Tek
 - Peak HP 119.9



Sound Reduction

- Engine
 - Ceramic coated exhaust system
 - Catalyzt
 - Intake foam
 - Panel Insulation
 - Custom panel inserts
 - Exhaust outlet direction

Other Considerations

- Studs
- Hiperfax slides
- Dual Runners
- Digatron monitoring system
- Second Finish
- Log wheels



Benefits

- Rider
 - Incredible power to weight
 - Easy to handle, fun to ride
- Dealer/Outfitter
 - Competitive MSRP given implemented technology
 - Appeals to all types and age groups of riders
 - Environmental
 - Reduces noise and hydrocarbon emissions

Thank you!



Questions?