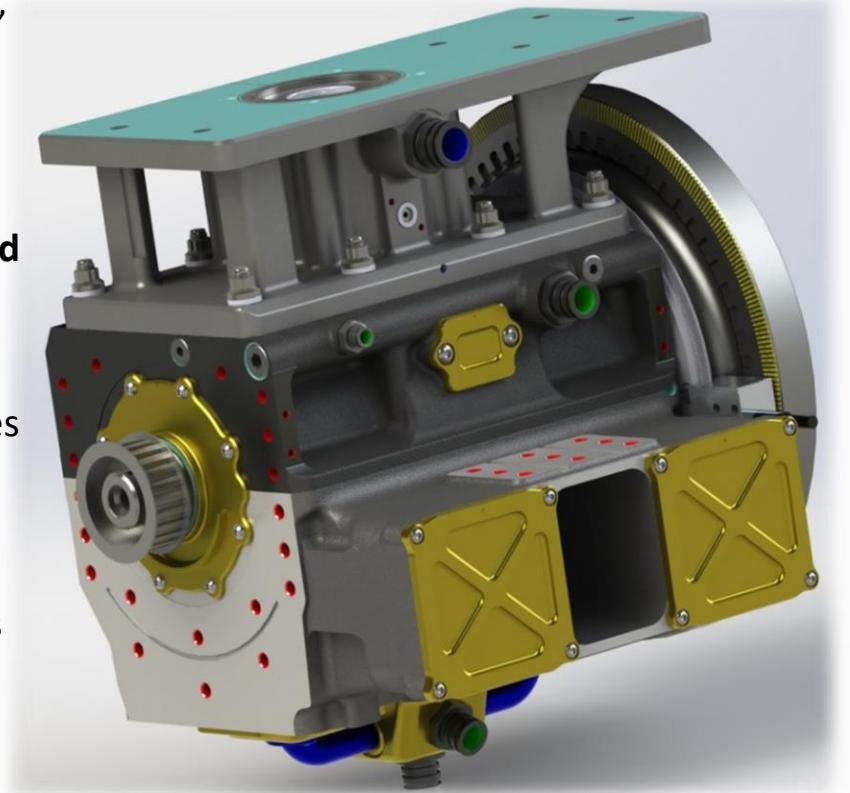


# EngineResearch.com

ANDERSON CONSULTING

## Single Cylinder Research Engine SC1

- Flexible “mechanical breadboard” test engine platform for your **custom** bore/stroke/head
- 100% **fully balanced** primary and secondary forces. RPM **not limited** by balance mechanism.
- Can use **stock** inline 4-cyl heads (firing cyl. #2) and their cam drives as well as **custom single** head.
- Lots of **sensor access**
- Features and **big cost advantages** to competition, and a \$/benefit ratio that makes DIY singles look short-sighted.



### Specs

<b>Bore/Stroke Range</b>	Customer specified 65 ->107mm
<b>Peak Cylinder Pres.</b>	300 bar
<b>Max RPM</b>	Piston, rings, and valve-train dependent, typ. < 9250
<b>Weight/Materials</b>	330lbs (150kg), ductile iron, 4130, 4340, 9510
<b>Block Construction</b>	Layered horizontally split, o-ringed, chambered crankcase
<b>Mains/Studs</b>	4x (1" thick) mains, 16x 12mm alloy studs
<b>Main/Rod Journals</b>	Conventionally split bearings, coated, 70/ 60mm
<b>Cooling</b>	Separate head and bore water cooling
<b>Oiling</b>	External pump, dry-sump crankcase
<b>Balance</b>	2 bolt on weights, 100% primary and secondary

# SC1 Cutaway

## Cylinder Head Adapter

Adjustable deck hts.  
and bore-crank offsets  
Can hold 4 cyl heads  
firing cyl #2, or custom  
single

## Sensor Access,

BDC pegging sensor  
shown, 4 flat water  
cooled sides available

## AVL 365x shaft encoder mount

60-2 tooth  
ECU crank trigger

WetLiner, CFD'd cooling optimized  
Gas Oring Combustion Seal

Piston topLand  
BDC IR temp location

## LowerEnd Access

2 sides, 1  
bottom; for  
telemetry, extra  
piston oiling etc.

Misc. Mount

**Monster Girdle**, 95lb  
ductile iron ,4x 1" mains,  
16x 12mm main studs

Billet alloy **rod**,  
journal 60mm

Billet alloy **crank**  
Superfinished, 360 deg  
rod oiling, 70mm mains

**Balance** mechanism, 100%  
primary and secondary, easy wt.  
change from below, forces  
resolved thru crank rather than  
block, less friction.

## Notes

- Replacement parts easily available, GM/Chrysler main/rod bearings, LSX rear seal..
- Racing influences,
  - Billet alloy center drilled rod, billet cryo'd alloy super-finished crank,..
  - Coatings; rings PVD, pins DLC, bearings graphite-moly
  - Quick disconnect AN plumbing connections
- All oil/water/electric/fuel ancillaries are remote
  - No parasitic losses of ancillaries (and their variances) affecting brake data
  - Initial warm ups can happen without engine rotation
- Dry sump gives:
  - Tighter control of oil temp than conventional wet sumps
  - Lowered windage losses, reducing parasitic losses