ENGINEERING WORKBOOKS

FABRICATION

METALS
- Metals Database
- Hardness
- Temperature Color
- Spark Color
- Tempering Steels
- Non-Ferrous
  - Aluminum
  - Cobalt
  - Columbium
  - Copper
  - Hf, Th, U, V, Bl
  - Lead
  - Magnesium
  - Nickel
  - Precious Metals
  - Ta, W, Re, Mo
  - Tin
  - Zinc
  - Zirconium
- Ferrous
  - Stainless Steels
  - Specialty Steels
  - Cast Irons
  - Carbon Steels
  - Alloy Steels

ABRASIVES
- Ball Hones
- Micro Finishing
- Sunnen Abrasives
- Sunnen Surfaces
- Surface Roughness

FASTENER SYSTEMS
- Bolt Clamp Analysis
- Bolt Force Analysis
- Bolt Properties
- Bolt Friction
- Fastener Corrosion

MATERIALS
- Wire & Steel Guage
- Properties
- Tubing Size
- Tube Spinning

BEARINGS
- Expected Life Factors
- Bearing Materials
- Plane Bearing Clearances
- Plane Journals
- Plane Thrust
- Accusump Oil Supply

GALVANIC COUPLES

TAP DRILL SIZES

CHASSIS

TIRES
- Avon F3 Tire Data
- Avon 3-Ply Tire Data
- Avon Pro-Series Data
- Rolling Resistance
- Tire Load Forces

STRUCTURAL
- Torsional Deflection
- Beams Torsional
- Beams Bending
- Materials
- Metals

VIBRATION
- Rotational Inertia
- Vibration Basics
- Vibration Frequencies
- Roller Bearing Frequencies
- Wheel Hop Frequencies
- Con Rod Balance
- Disc Balance
- Sine Wave Analysis

CONVERSION TOOLS

AERODYNAMICS

BRAKES
- Brake Tutorial
- Bias Targets
- Disc/Disc Systems
- Friction Materials
- Disc/Drum Systems
- Calculations

ELECTRICS
- Lambda Sensors
- Galvanics
- Resistors
- Thermocouples
- Battery AH Life
- Wire Capacity
  - AWG Wire Data
  - Wire Resistance
  - Standard Resistance
  - Voltage Drop

SUSPENSION & VEHICLE DYNAMICS
- Geometry Fundamentals
  - Front Geometry
  - Kart Chassis Design
  - Steering - Ackerman
    - Bell Crank
    - Rack & Pinion
- Mass Distribution & Transfer
  - Suspension Dynamics
  - Mass Locations
  - Motion Resistance
  - Weight Transfer
- Springs - Shocks - Bars
  - Coil Springs
  - Leaf Springs
  - Torsional Springs
  - Torsional Bars
  - Anti-Roll Bars
  - Shock Analysis
  - Ride Rate
- Vehicle Acceleration
  - Single Gear Acceleration
  - Multi-Gear Auto
  - Multi-Gear Moto
  - Multi-Gear Snow
  - Gear

ENGINE

FUELS
- Stoichiometry
- Fuel Tuning
- Fuel Facts
- Di-Electric Values
- Infra-Red Absorption
- Bond Energies
- Emissions
  - Emissions Model
  - Emissions Production
  - Emissions Tuning
- Fuel Properties
  - Fuel Components
  - Fuel Sensitivity
  - Auto Ignition
  - Fuel Energy/Power Additives
  - Flame Temps
  - Fuel Blends
  - Octane Values
  - Waukesha Octane Engine

INDUCTION
- Carb Fuel Flow
- Fuel Injection
- Fuel Consumption
- Fuel Evaporation
- Throttle Plate Angle
- Carb Air Flow
- Tuned Injection
- Carburetors
  - Walbro Carbs
  - Mikuni Systems
  - Mikuni Nozzles
  - Mikuni Jet Areas
  - Mikuni Flow Areas
  - Weber Carbs

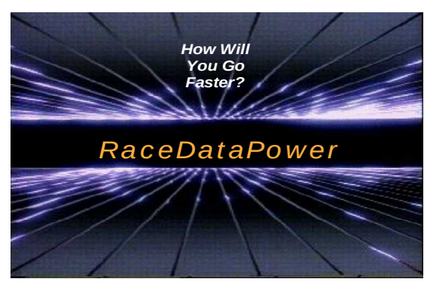
DESIGN
- Compression
- Crankshaft
- Pistons
  - Overview
  - Design
  - Temperatures
  - Clearances
  - Damage
  - Dimension
  - Material Properties
  - Pin & Rings
- Valve Train
  - Camshaft Design
  - Camshaft Analysis
  - Valve Springs
  - Valve Float Exhaust
  - Valve Float Intake
  - Valve/Piston Clearance
  - Optimum Valve Size
- Thermodynamics
  - Conduction
  - Metals
  - Non-Metals
  - Plastics & Ceramics
  - Gases
  - Liquids
  - Radiation
- Calculations
  - Conversion Tools
  - Bore-Stroke Displacement
  - Power Estimates
  - Engine Truth Table
  - Modeling Parameters
  - Time Events

DRIVING

LUBRICATION
- Specialty Oil Viscocity
- Motor Oil Viscocity
- Gear Oil Viscocity
- Trans Oil Viscocity
- Oil Lab Reports
- Wear Metals
- Oil Additives
- Oil Analysis

COMBUSTION
- Principles
- Air & Fuel Basics
- Ignition Basics
- Engine Temp Tuning
- Combustion Burn Rate
- Knock Fundamentals
- Firing Voltage
- Spark Plugs

TESTING
- Engine Temperature
- Conversion Tools
- Correction Factors
- Dyno Testing
- Flow Testing
- BMEP Comparison
- Vibration & Balance
- Electrics



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