





# WHEEL TO WHEEL POWERTRAIN PONTIAC GTO CONCEPT

## VEHICLE SPECIFICATIONS

### CONFIGURATION:

- FRONT ENGINE, REAR WHEEL DRIVE
- 109.8" WHEEL BASE
- 61.4" FRONT TRACK / 62.1" REAR TRACK
- 3725 LBS TOTAL WEIGHT – 2048.75 LBS FRONT WEIGHT (55%) / 1676.25 LBS REAR WEIGHT (45%)

### DRIVETRAIN:

- WHEEL TO WHEEL POWERTRAIN BUILT SUPERCHARGED LS2 389c.i. ENGINE
- TREMEC T-56 6 SPEED MANUAL TRANSMISSION
- OEM LOCKING DIFFERENTIAL
- OEM TWO PIECE DRIVE SHAFT WITH COMPLIANCE CENTER COUPLING
- OEM HALF SHAFTS

### CHASSIS:

- KONI STRUT INSERTS - Front
- KONI SHOCKS - Rear
- BAER GTO BRAKE KIT
- BMR SUBFRAME CONNECTORS
- W2W REAR SUBFRAME LOCATING LINKS
- HRE 3 PC. WHEELS, 18" FRONT / 19" REAR
- YOKOHAMA ADVAN NEOVA AD08 R TIRES

### BODY / INTERIOR:

- OEM FRONT AND REAR SEATS IN RED AND BLACK LEATHER
- W2W I/P MOUNTED GAUGE PANEL
- SHERWIN-WILLIAMS Planet Color Paint in "BLACK MIST"
- WHEEL TO WHEEL COMPOSITE WHEEL FLARES
  - Carbon Fiber replacement front fenders
  - FRP rear quarter panel inserts
- OEM 2005 HOOD ASSEMBLY WITH SCOOPS MODIFIED TO BE FUNCTIONAL
- OEM 2005 REAR FASCIA ASSEMBLY WITH DUAL EXHAUST OUTLETS

## POWERTRAIN SUMMARY

### PERFORMANCE DATA (ENGINE):

	MAX HORSEPOWER @ RPM	MAX TORQUE @ RPM
<b>STD CORRECTED VALUES</b>	603 hp @ 5900	601 lbft @ 4500
<b>SAE CORRECTED VALUES</b>	575 hp @ 5900	575 lbft @ 4500

\*Engine dyno charts located at end of document.

- WHEEL TO WHEEL POWERTRAIN BUILT LS2 ENGINE WITH ROTREX C38-71 SUPERCHARGER  
DISPLACEMENT : 389 cu. in. / 6.5 liter  
BORE AND STROKE : 4.00 x 3.875 in.  
COMPRESSION RATIO : 9.0: 1

### SHORT BLOCK ASSEMBLY:

- OEM LS2 CYLINDER BLOCK
- CALLIES CRANK, BILLET STEEL, 3.875" STROKE
- ARP MAIN BEARING STUDS
- CLEVITE MAIN AND CONNECTING ROD BEARINGS
- HOWARDS CONNECTING RODS, TITANIUM
- MAHLE PISTONS, FORGED ALUMINUM
- SEALED POWER PISTON RINGS
- W2W/GM OIL PUMP
- ATI TORSIONAL CRANK DAMPER

### CYLINDER HEADS AND VALVETRAIN:

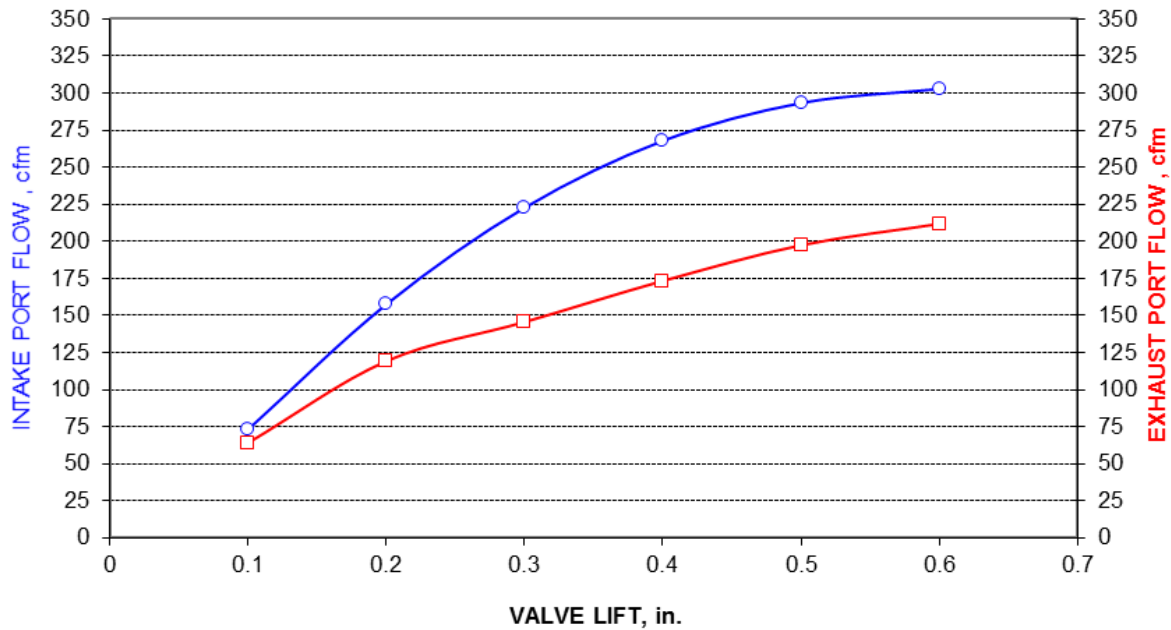
- OEM L92 CYLINDER HEADS PREPPED BY FLOW TECHNOLOGIES INC. INCLUDING NEW VALVE STEM INSERTS
- MANLEY 5/16 STEM TITANIUM INTAKE VALVES
- MANLEY 5/16 STEM INCONEL EXHAUST VALVES
- CAM MOTION CAMSHAFT
- OEM LIFTERS
- JESEL ROCKER ARMS

### INTAKE AND EXHAUST:

- FAST LSX INTAKE MANIFOLD
- OEM 6.0L TRUCK 90 mm THROTTLE BODY
- OEM CAST IRON EXHAUST MANIFOLDS



## CYLINDER HEAD FLOW PERFORMANCE



### FUEL DELIVERY:

- ACCELL 435 LB/HR FUEL PUMP (PUMP NO. 74702)
- OEM FUEL FILTER (FILTER NO. 92075337)
- MOTOTRON 60 lb/hr FUEL INJECTORS
- SNOW PERFORMANCE ALCOHOL INJECTION SYSTEM
  - (Not currently installed – boost levels do not require additional knock control beyond premium unleaded fuel)

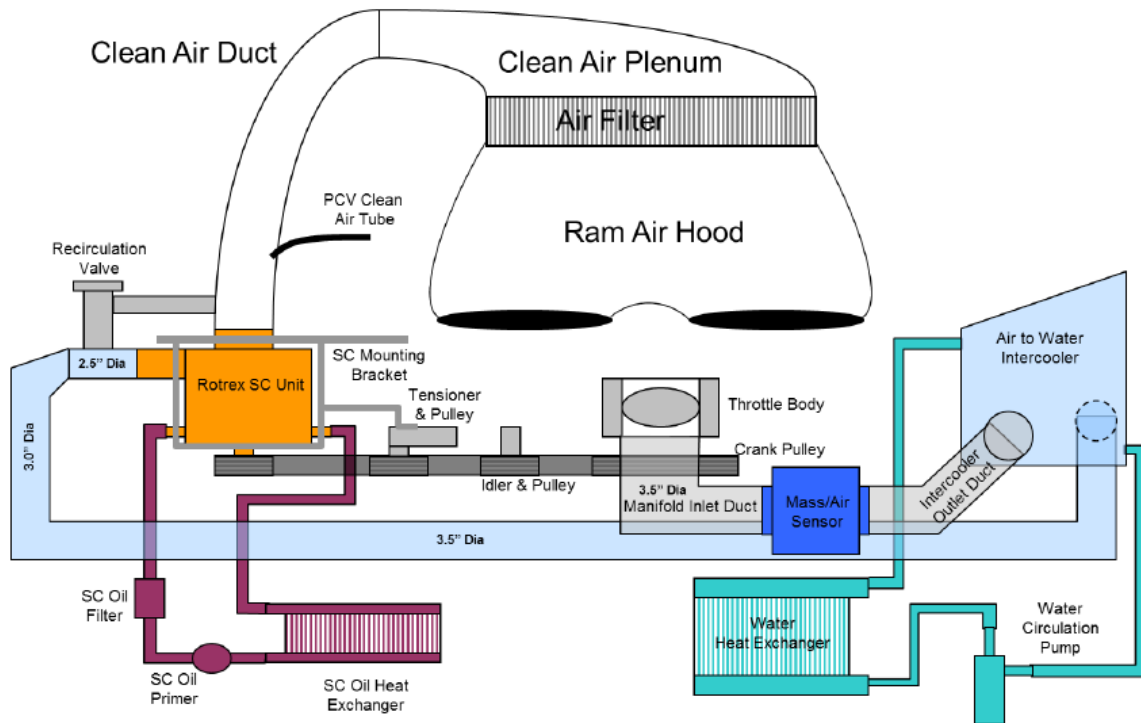
### ENGINE CONTROL:

- OEM PCM
- PMAS MASS AIR FLOW SENSOR W/ Z06 TRANSFER FUNCTION
  - NOTE – THE 2004 PCM DOES NOT ALLOW FOR OVER RANGING THE MAFS INPUT SIGNAL; POWER BOOSTING THE ENGINE RESULTS IN ENOUGH ADDITIONAL AIRFLOW TO CREATE THIS CONDITION, WHICH FORCES THE PCM INTO LIMP HOME MODE.
- W2W CALIBRATION

### INDUCTION:

- WHEEL TO WHEEL POWERTAIN LS ENGINE SUPERCHARGER PACKAGE
  - ROTREX C38-71 PLANETARY TRACTION ROLLER CENTRIFUGAL COMPRESSOR SUPERCHARGER ASSEMBLY
  - W2W BILLET ALUMINUM SUPERCHARGER MOUNTING BRACKETS
  - ACTIVE AUTOWERKES BY-PASS (RECIRCULATION) VALVE
  - CRANKSHAFT DRIVE PULLEY, BILLET STEEL; MOUNTS IN FRONT OF EXISTING CRANK PULLEY
  - 8 SHEAVE SUPERCHARGER DRIVE BELT
  - IDLER PULLEY AND BRACKET ASSEMBLY
  - BELT TENSIONER ASSEMBLY
  - SUPERCHARGER INTERNAL DRIVE RATIO = 7.5 : 1
  - ENGINE / SUPERCHARGER PULLEY RATIO =  $8.375 / 3.622 = 2.31 : 1$
  - TOTAL ENGINE / SUPERCHARGER DRIVE RATIO = 17.325 : 1
  - SUPERCHARGER SPEED AT 6,500 ENGINE RPM = 112,612 RPM

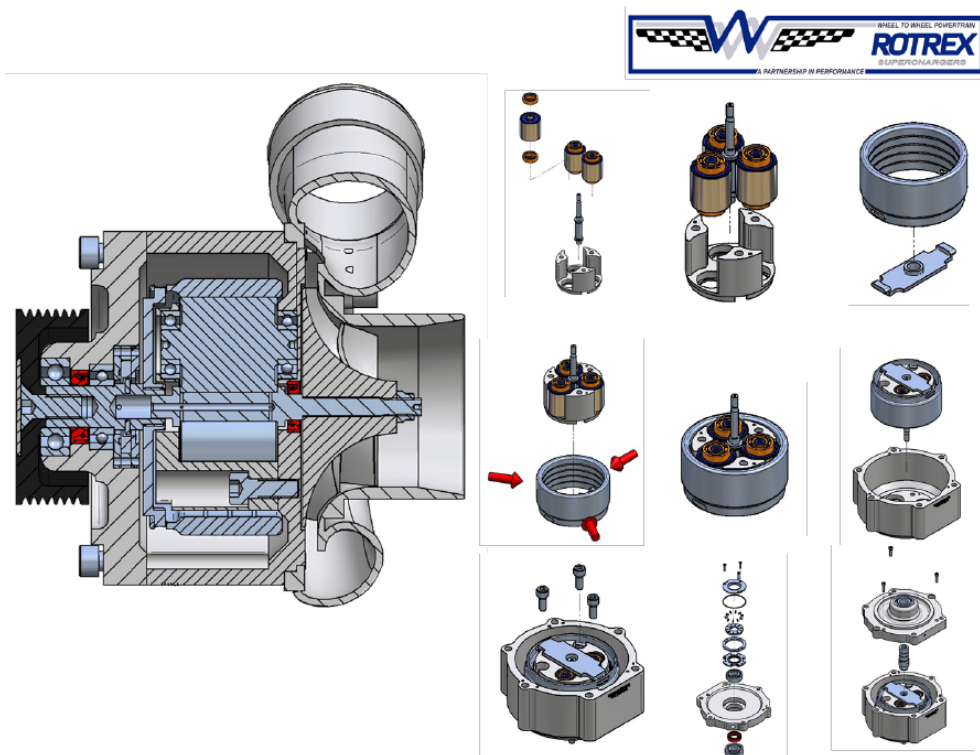
## SUPERCHARGER SYSTEM SCHEMATIC:

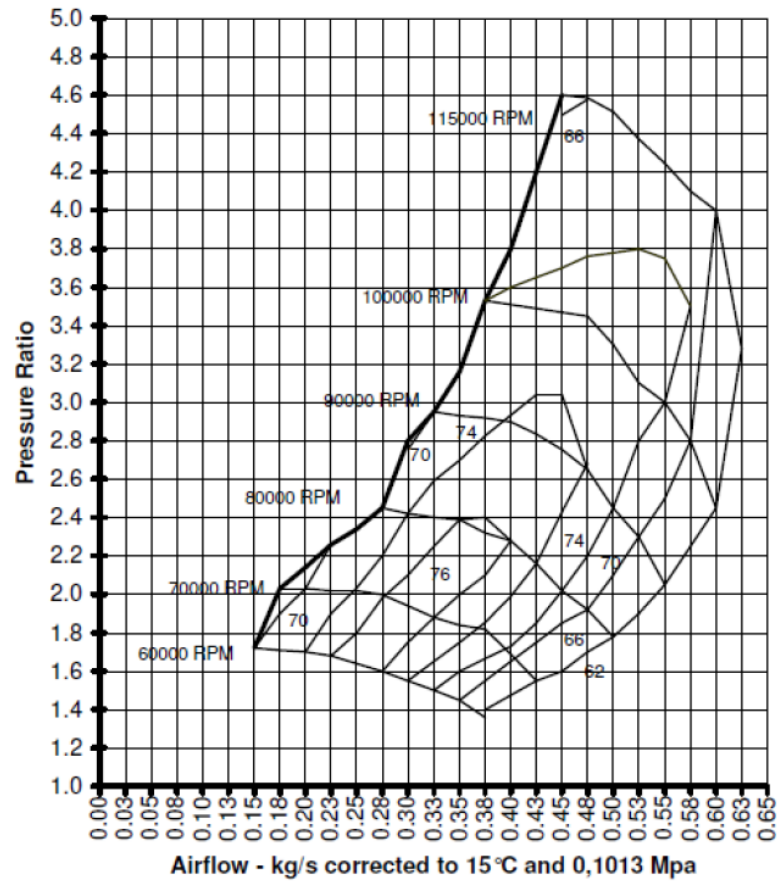


VEHICLE FRONT



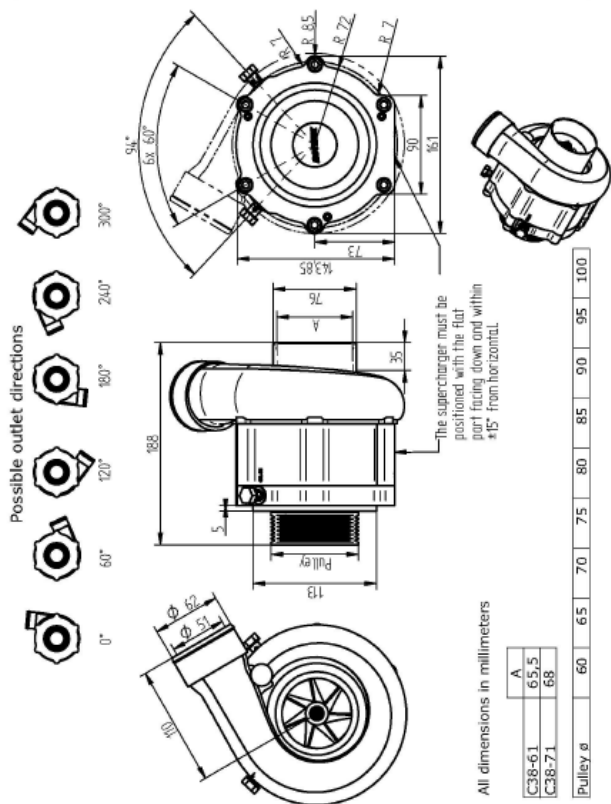
## SUPERCHARGER EXPLODED VIEW:



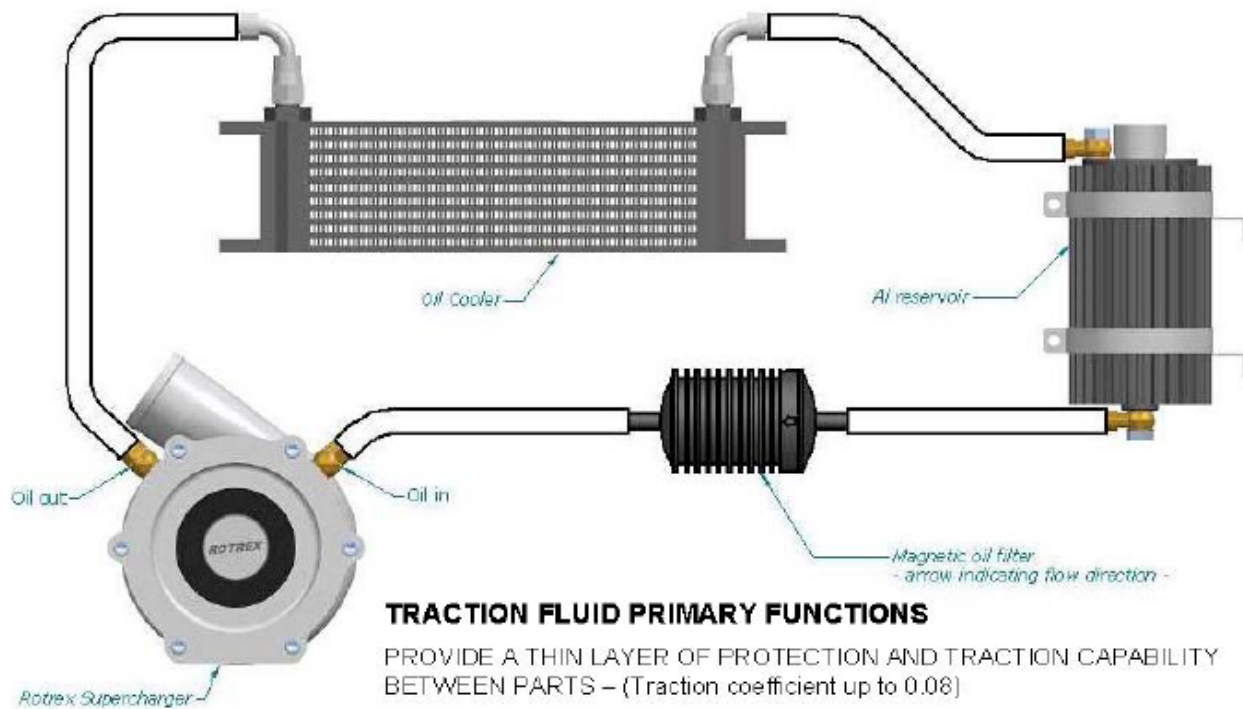


Technical Data Sheet

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## SUPERCHARGER TRACTION FLUID SYSTEM



### TRACTION FLUID PRIMARY FUNCTIONS

PROVIDE A THIN LAYER OF PROTECTION AND TRACTION CAPABILITY BETWEEN PARTS – (Traction coefficient up to 0.08)

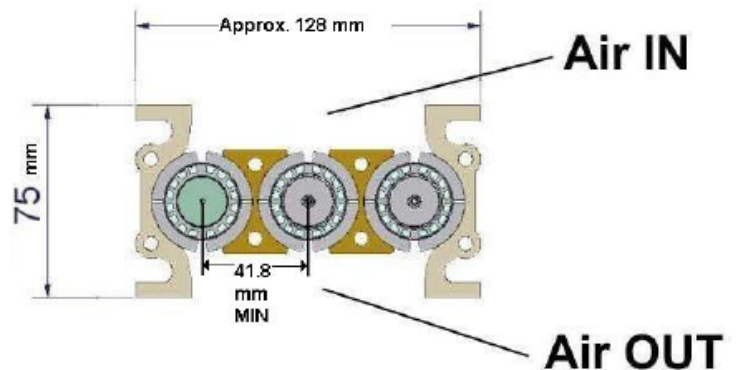
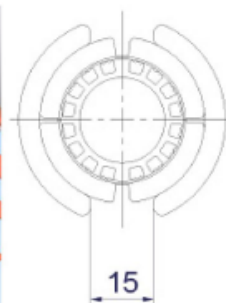
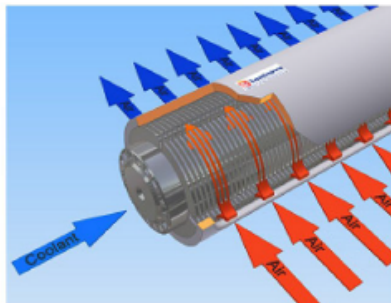
COOLING – (Maximum suggested oil inlet temp = 80°C)

CLEANING (Through cellulose and magnet)

DEFOAMING (Built into reservoir)

- **WHEEL TO WHEEL** FABRICATED LIQUID TO AIR INTERCOOLER USING **LAMINOVA** ELEMENTS

Example **LAMINOVA** Intercooler Cross Section



**INDUCTION:**

- W2W FRP FABRICATED AIR CLEANER ASSEMBLY WITH INLET SEALS TO MATCH TO MODIFIED 2005 HOOD ASSEMBLY
- K&N 18.813" x 5.688" AIR FILTER (FILTER NO. 33-2640, '88 Porsche 944S)
- W2W INVESTMENT CAST ALUMINUM THROTTLE BODY INLET DUCT

**EXHAUST SYSTEM:**

- OEM CATALYTIC CONVERTER ASSEMBLIES
- CORSA PERFORMANCE CUSTOM BUILT 3" DUAL EXHAUST SYSTEM



## DRIVELINE

### TRANSMISSION:

- TREMEC T56 6-SPEED MANUAL TRANSMISSION
  - GEAR RATIOS: 1<sup>st</sup> - 2.970 / 2<sup>nd</sup> - 2.070 / 3<sup>rd</sup> - 1.430 / 4<sup>th</sup> - 1.000 / 5<sup>th</sup> - 0.840 / 6<sup>th</sup> - 0.570
- B&M SHORT THROW SHIFTER; W2W MODIFIED LEVER ANGLE

### DRIVESHAFT:

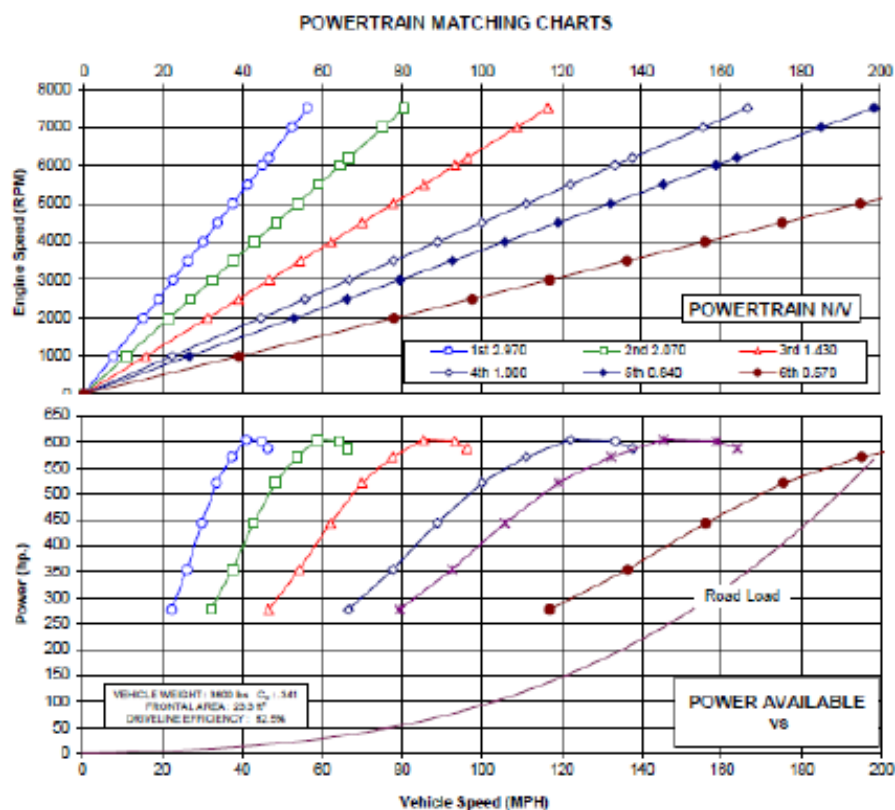
- OEM TWO PIECE DRIVSHAFT WITH COMPLIANT CENTER COUPLING

### DIFFERENTIAL:

- OEM POSI-TRACTION AND 3.46:1 RATIO RING AND PINION

### DRIVESHAFT:

- OEM LH AND RH HALF SHAFTS



Transmission Gear	1st	2nd	3rd	4th	5th	6th	Rear Axle Ratio :
Ratio	2.970	2.070	1.430	1.000	0.840	0.570	3.46 :1
N/V	133.65	93.15	64.35	45.00	37.80	25.65	
RPM	Vehicle Speed (MPH)						
0	0.00	0.00	0.00	0.00	0.00	0.00	Tire SLR :
1000	7.49	10.74	16.54	22.22	28.45	39.69	12.922 in.
2000	14.90	21.47	31.08	44.44	52.91	77.87	Tire Revs/Mile :
2500	19.71	26.84	38.85	55.55	68.14	97.46	780.38
3000	23.86	32.21	46.82	68.87	79.38	116.98	
3500	28.49	37.41	54.39	77.78	92.09	130.45	
4000	32.63	42.04	62.16	88.89	105.82	145.94	
4500	37.41	46.31	68.83	100.00	118.04	163.43	70 MPH Cruise :
5000	41.16	50.04	75.70	111.11	132.27	184.93	1790 RPM
5500	44.89	53.08	82.24	122.22	145.50	204.42	
6000	48.60	56.41	88.33	133.33	156.73	223.91	
6200	50.84	58.50	90.35	137.77	160.02	231.71	
7000	57.37	65.15	103.78	155.55	185.18	272.90	
7500	60.12	68.51	110.55	166.66	198.41	292.39	

## CHASSIS SUMMARY

### SUSPENSION:

- KONI FRONT STRUT INSERTS INTO OEM STRUT HOUSINGS
- KONI REAR SHOCK ABSORBERS
- WHEEL TO WHEEL FABRICATED BILLET ALUMINUM STRUT TOWER BRACE
- EIBACH 1¼" FRONT STABILIZER BAR
- QUICKOR ¾' REAR STABILIZER BAR

### BRAKES:

- BAER FRONT: 'EXTREME +'
  - 14" TWO PIECE, ZINC PLATED, SLOTTED AND DRILLED VENTED ROTORS
  - FORGED ALUMINUM MONOBLOCK 6 PISTON CALIPERS
  - D1247 PADS
  - STAINLESS STEEL BRAKE HOSES
- BAER REAR:
  - 14" TWO PIECE, ZINC PLATED, SLOTTED AND DRILLED VENTED ROTORS
  - FORGER ALUMINUM MONOBLOCK 6 PISTON CALIPERS
  - D1247 PADS

### WHEELS:

- HRE FRONT: 3 PC. 18x9" 5 on 115 BOLT PATTERN, 70MM CENTER BORE, 56 mm OFFSET, BODY COLORED WHEEL CENTER WITH POLISHED LIP
- HRE REAR: 3 PC. 19X11" 5 ON 115 BOLT PATTERN, 70MM CENTER BORE, 27 mm OFFSET, BODY COLORED WHEEL CENTER WITH POLISHED LIP

### TIRES:

- YOKOHAMA ADVAN NEOVA AD08 R 265/35-18 FRONT AND YOKOHAMA ADVAN NEOVA AD08 R 305/30-19 REAR
- COMPLETE TIRE AND WHEEL SPECIFICATIONS AT END OF DOCUMENT

## EXTERIOR SUMMARY

### BODY:

- WHEEL TO WHEEL COMPOSITE WHEEL FLARES FOR FITMENT OF LARGER WHEELS/TIRES
  - (see summary at end of document)
- OEM 2005 HOOD ASSEMBLY WITH AIR INLET DUCTS MODIFIED TO BE FUNCTIONAL
- OEM 2005 REAR FASCIA ASSEMBLY WITH DUAL TAIL PIPE OPENINGS

### PAINT:

- SHERWIN-WILLIAMS 'PLANET COLOR' BASE AND MID-COAT "BLACK MIST", SPECIAL MIX TINT
- SHERWIN-WILLIAMS CLEAR-COAT

## INTERIOR SUMMARY

### GAUGES:

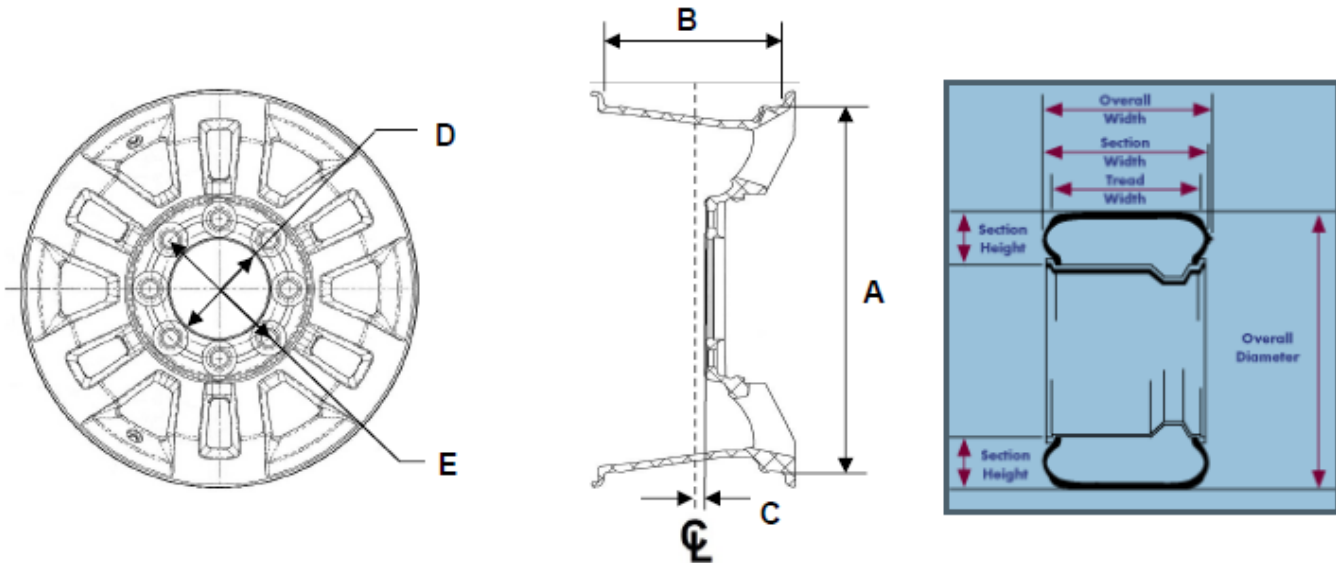
- AUTOMETER NEXUS ELECTRIC BOOST GAUGE
- AUTOMETER NEXUS ELECTRIC AFR GAUGE
- WHEEL TO WHEEL CUSTOM DASH GAUGE POD

### UPHOLSTERY:

- OEM GTO RED AND BLACK LEATHER SEATS

## Tire and Wheel Specifications:

Program Name:	RCA GTO
Program Number:	w001789
Vehicle Year:	2004
Vehicle Make:	Pontiac
Vehicle Model:	GTO



### Wheel Information

Wheel Manufacturer:	HRE
Wheel Mass (kg):	
Wheel Finish:	Machined and Painted
Wheel Construction:	3 pc. Aluminum
Wheel Part Number:	845
A Wheel Diameter (in.):	18F 19 R
B Wheel Width (in.):	9F 11 R
C Wheel Offset (mm)*:	36F 27R
D Hub Diameter:	70mm
E Bolt Circle:	5 120

\* (+) for inset, (-) for outset

### Wheel Stud Information

Number of Studs:	5
Stud Diameter:	12mm .557 knurl 48 mm long
Stud Thread:	1.5

### Tire Information

Tire Manufacturer:	Yokohama
Tire Model:	Advan Neova AD08 R
Tire Part Number:	
Tire Size Front:	265 / 35 R 18
Tire Size Rear:	305 / 30 R 19
Placard Pressure (psi):	35
Tire Mass (kg):	tbd
Static Load Radius (mm):	tbd
Load (for SLR) (kg):	tbd

### Calculated Values

#### Overall Diameter

Front (in.)	Rear (in.)
25.85	26.20

#### Radius (Unloaded)

Front (in.)	Rear (in.)
12.93	13.10

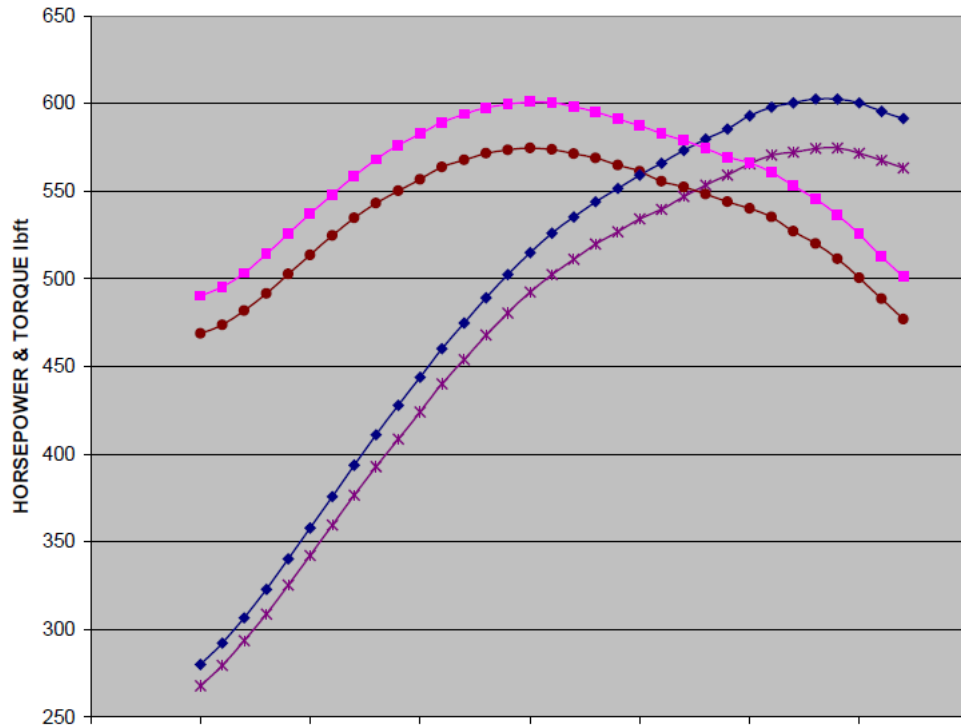
#### Section Height

Front (in.)	Rear (in.)
3.93	3.60

#### Section Width

Front (in.)	Rear (in.)
11.22	12.01

## WOT DYNAMOEMETER PERFORMANCE: 389 ci SUPERCHARGED GTO ENGINE (FULL INDUCTION SYSTEM, 20 inHG BACK PRESSURE)



SAE CORRECTED  
575 hp @ 5900  
575 lbft @ 4500  
534 lbft Average Torque (3000 to 6200 RPM)

STANDARD CORRECTED  
603 hp @ 5900  
601 lbft @ 4500  
559 lbft Average Torque (3000 to 6200 RPM)

—x— HORSEPOWER SAE COR.  
—●— TORQUE SAE COR.  
—◆— HORSEPOWER STD COR.  
—■— TORQUE STD COR.

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## Body Construction Summary:

### FROM IDEA TO REALITY

