



Vehicle Technical Specifications

Vehicle 2004 CTS-V/ R Class GT

2004 WORLD CHALLENGE

VEHICLE MANUFACTURER:	<u>Cadillac</u>
YEAR & MODEL:	<u>2004 CTS-V / R</u>

This specifications form was developed by SCCA Pro Racing and will be used by the Series Technical Administrator, along with the Electronic Parts Catalog (EPC), the Technical Information System (TIS), and the FIA/ASN Homologation forms (or equivalent documentation) to establish technical compliance for vehicles competing in the SCCA PRO RACING WORLD CHALLENGE series.

The specifications within this form include all modifications that have been approved by SCCA Pro Racing specifically for the vehicle model(s) and year(s) listed on this page. The parts, specifications and assemblies used shall be those for the unmodified stock vehicle, those permitted within the Pro Racing Regulations (PRR) and/or within this VTS. If the stock parts, specifications and/or assemblies exceed the performance potential of those approved within this form, then the parts, specifications and/or assemblies used shall meet those listed within this form.

Refer to SCCA PRR for rules regarding all vehicle specifications not specifically listed within the VTS. Specifications regarding wheels and tires may be found in Article 3 and Appendix A of the PRR. Specifications regarding brakes may be found in Article 3 of the PRR. Appendix A will list what size restrictor to use if a restrictor is required to be run.

When looking for the most current rules, go to www.world-challenge.com and look under the "Competitors" section for latest Technical Bulletins, Participant Bulletins, and Appendix A.

This Vehicle Technical Specification sheet is a permissive document. The exact configuration of any modification allowed within this VTS is subject to the approval of the TECHNICAL ADMINISTRATOR.

Note: this form will have measurements in both U.S. Standard and Metric units of measure when practical. U.S. measurements will be in parenthesis.

1. GENERAL VEHICLE DESCRIPTION:

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A. Body Type (Sedan, Coupe, Hatchback): Sedan B. Engine Location (front, rear, mid): Front
 C. Drive Type: Front: _____ Rear: X AWD: _____ D. Wheelbase: 2881mm (113.4")
 E. Induction Type (Turbo, Super, N.A.): N.A. F. Appendix A Weight (@ start of season): 1360.5kg (3000lbs)

2. ENGINE: OEM DESIGNATION:

A.1. Displacement: 5782cc (352.7ci) A.2. Number of Cylinders: 8 - (V)
 A.3. Rev-Limit: Required (Y / N): Yes A.4. @ RPM 7000 A.5. Method: Fuel Cut
 A.6. Compression Ratio (Max): 12.0:1 A.7. Piston Stroke: 83.0mm (3.27")
 A.8. Restrictors – (teams are required to be prepared to install these restrictors): _____ % of Reduction: 12, 14, 16, 18, 20 Hole Diameter (mm): 84.4, 83.5, 82.5, 81.5, 80.5
 A.9. Cylinder Firing Order: 1-8-7-2-6-5-4-3 A.10. Direction of Cam Rotation (from front): Clockwise

B. CYLINDER BLOCK:

Part Number: 12571246 (GM)

B.1. Cylinder Block Material: Aluminum B.2. Cylinder Bore (Max): 105.3mm (4.15")

C. CYLINDER HEAD:

Part Number: 12578452 (GM)

C.1. Cylinder Head Material: Aluminum

D. VALVE SYSTEM:

D.1. Number of Valves per Cylinder: _____ D.1.a. Intake: 1 D.1.b. Exhaust: 1
 D.2. Valve Head Diameter (Max): _____ D.2.a. Intake: 56.0mm (2.20") D.2.b. Exhaust: 41.0mm (1.61")

E. INTAKE PORT DIMENSIONS:

E.1. At Inlet Manifold Face (Max): _____ E.1.a. Height: 62.2mm (2.45") E.1.b. Width: 36.0mm (1.42")
 E.2. Intake Port Work Allowed (Yes or No): No F.2.a. Depth from Face: _____

F. EXHAUST PORT DIMENSIONS:

F.1. At Exhaust Manifold Face (Max): _____ F.1.a. Height: 35.1mm (1.38") F.1.b. Width: 42.5mm (1.67")
 F.2. Exhaust Port Work Allowed (Yes or No): No F.2.a. Depth from Face: _____

G. PISTON & CONNECTING ROD:

G.1. Connecting Rod Length (Axis Centerline to Axis Centerline) N/A Approved: 159.7mm (6.29")
 Stock: _____
 G.2. Reciprocating Assembly (rods, caps, bolts, piston, rings, pin, clips, bearings) 1247g (44.0oz) Min: 1190g (42.0oz)
 Stock: _____
 G.3. Aftermarket Rods Allowed (Yes / No): Yes Aftermarket Pistons Allowed (Yes / No): Yes

H. CAMSHAFT:

Part Number: XX2333 HA (GM)

H.1. Valve Actuation (direct, rocker, etc.): Pushrod H.2. Rocker Ratio (if applicable): 1.8:1 (@ max. lift)
 H.3. Lifter Design (if applicable): Hydraulic H.4. Max. Valve Lift (@ zero lash): 0.620"
 H.5. Type of Cam Follower (roller, solid, etc.): Roller

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I. CRANKSHAFT:

Part Number: APZ31L-MG (Callies)

I.1. Mass (Min): 20.86kg (46.0 lbs.)

J. FLYWHEEL: Stock Ring Gear Diameter: 359mm (14.125")

K. FORCED INDUCTION INTAKE SYSTEM: Not Applicable

L. INTAKE MANIFOLD: Part Number: 12569011 (GM)

L.1. Port at Cylinder Head Face (Max): L.1.a. Height: 59.2mm (2.33") L.1.b. Width: 32.0mm (1.26")

L.2. Intake Manifold Volume (Max): 5.9 Liters

L.3. Throttle Body Bore Diameter & Part #: 90.0mm (3.54") ETC / 12570790 (GM)

L.4. # of Throttle Bodies: 1 L.5. # of Butterflies per Throttle Body: 1

L.6. Intake Manifold Material: plastic L.7. Manifold Pieces: 1

L.7. Intermediate Port Matching Allowed (Yes / No): N/A L.8. Depth from Intermediate Face: N/A

L.9. Intake Runner Port Matching Allowed (Yes / No): Yes L.10. Depth from Mounting Face: 1"

M. ENGINE MISCELLANEOUS:

This engine is limited to a 0.5mm overbore, not the series standard 1.0mm overbore. Hitachi MAF sensor. Stock valvetrain components must be used. Oil pan & sump from Katech (p/n: KGM 3022 R5) to be used. For 2004 season, the firewall may be moved rearward 3.08" from the stock location and the engine moved rearward to the firewall. Airbox used at Sebring shall be used for remainder of 2004 season w/o change. 50% restrictor (63.6mm) required as of 04/02/04. 15mm thick spacer may be used between throttle body and restrictor.

3. DRIVETRAIN:

A. TRANSMISSION:

A.1. Number of Forward Speeds: 6 A.2. Manufacturer: Tremec

A.3. Gear Ratios: A.3.a. 1st: 2.69 A.3.b. 2nd: 1.78 A.3.c. 3rd: 1.31

A.3.d. 4th: 1.00 A.3.e. 5th: 0.85 A.3.f. 6th: 0.75

A.4. Gear Shift Pattern / Engagement (synchromesh, dog-ring, etc.): H-pattern / Synchromesh

B. ALL WHEEL DRIVE: Not Applicable

C. FINAL DRIVE: Axle Ratio: 3.9 (only ratio permitted)

D. DRIVETRAIN MISCELLANEOUS:

Hewland 5-speed dog-ring gearbox will be used at Sebring due to supply/gearbox problems. 100 lbs. must be added to the Appendix A base weight. (Hewland Ratios: 1st-2.47, 2nd-1.79, 3rd-1.35, 4th-1.08, 5th-0.89). Hewland drop gear will be 0.96 for Sebring race. The production Tremec 6-speed transmission will be used starting at Lime Rock. The following ratios may be used till July 1st due to Tremec delivery schedule; (1st-2.66, 2nd-1.78, 3rd-1.30, 4th-1.00, 5th-0.80, 6th-0.63). The gear ratios listed in Section A will be used with the Tremec box at all races following July 1st. Quarter Master assembly containing bellhousing, ring gear, clutch and starter (p/n: 39517790) is permitted. Mid-valley adapter plate (p/n: STA202-ADCW) is permitted. Production Tremec T-56 transmission must be rotated on its side due to clearance issues.

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4. SUSPENSION:

4.A. Suspension Type (Double A-arm, 4.A.1. Front: Double A-arm 4.A.2. Rear: Multi-link etc.): _____

4.B. SUSPENSION MISCELLANEOUS:

Front assembly (p/n: 1902-E1-1000)(L&R) permitted. Front upper control arm (p/n: 1902-E1-3000) permitted.
Front cradle (p/n: 1902-E1-8000) permitted. Rear trailing arm (p/n: 1902-F1-4000) permitted. Rear cradle
(p/n: 1902-F2-8000) permitted. Note: the front and rear cradles are production pieces modified for reduction
in ride height. Stock steering rack may be repositioned due to clearance issues.

5. CHASSIS:

5.A. Contact Technical Department for Chassis/Body dimension information sheets if needed.

5.B. CHASSIS MISCELLANEOUS:

Transmission access panel may be installed in transmission tunnel. Replica of rear seat platform permitted.
Bolt-in rear X-brace extending behind rear axle may be use to strengthen rear sub-frame mounting points.

Modifications Needed to Reach Minimum Ride Height:

Transmission tunnel may be production appearing replica. Front hinge post cut for exhaust routing. Rocker
bottom pinch flange may be trimmed and capped. Production sled rails may be trimmed and capped. Rear
chassis rails may be raised.

As of 04/02/04 the post-session rear weight distribution w/ driver shall not exceed 49% of total weight.

6. BODY:

6.A. Stock Coefficient of Drag (Cd): .354

6.B. Body Overhang (from Axle Centerline): 6.B.1. Front: 851mm (33.5") 6.B.2. Rear: 1095mm (43.1")

6.C. Stock Body Materials: Steel unitized body with steel body panels and non-metallic front and rear fascias.

6.D. BODY MISCELLANEOUS:

CTS-1A-140: rear quarter panels (L&R), CTS-1A-110: front door assy. (L&R), CTS-1A-150: rear decklid,
CTS-1A-010: front fascia, CTS-1A-020: front splitter assy., CTS-1A-030: vented hood, CTS-1A-100: front
fenders (L&R), CTS-1A-120: rocker panels (L&R), CTS-1A-130: rear door assy. (L&R), CTS-1A-160: rear
fascia, CTS-1D-000: tail frame & wing assy.

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