

# Vehicle Technical Specification

Vehicle: Dodge Challenger

Class: GTS



## DRAFT VTS Approved for Racing

Vehicle Manufacturer:

Dodge

Year and Model:

2010 Challenger

This draft of the listed vehicle's VTS is posted with the specifications that we currently have for the vehicle. If a specification is **highlighted in green**, we are waiting to acquire that information from the manufacturer, or from certified documentation provided by the team(s). If a specification is **highlighted in yellow**, that specification is under review and may not be set until all blanks in the VTS sheet are completed. The specifications that are listed, and not highlighted, are considered to be a work in progress and may be changed without being posted by technical bulletin. Therefore, competitors may use the specifications listed to begin preparing their vehicles. The missing specifications will be added as they are received.

When a vehicle is in this draft form, it will be permitted to compete in any World Challenge competitions. Once the World Challenge Technical Staff has determined that this specific vehicle has demonstrated reasonable performance in relationship to other cars competing in the series and all specifications have been obtained, then this VTS sheet will be removed from DRAFT status and transformed into a final VTS. From that time forward, all changes to the VTS will be subject to VTS change request approvals.

Competitors needing a specification that is not listed should contact the World Challenge Technical Department to find out when that specification will be available and should not make assumptions as to what these specs might be unless otherwise directed to do so by the World Challenge Technical Department.

### SCCA Pro Technical Department

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This specifications form was developed by SCCA Pro Racing and will be used by the TECHNICAL MANAGER to establish technical compliance for vehicles competing in the SCCA PRO RACING WORLD CHALLENGE series. The TECHNICAL MANAGER can also use, but is not limited to also using the following items to check compliance: Electronic Parts Catalog (EPC), Technical Information System (TIS), and the FIA/ASN Homologation forms (or equivalent documentation).

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 with this form, then the parts, specifications and/or assemblies used shall meet those listed within this form.

Refer to SCCA PRR and Appendix A. for rules regarding all vehicle specifications not specifically listed within the VTS.

The most current rules can be downloaded from the official website: [www.world-challenge.com](http://www.world-challenge.com) and look under the "Competitors" section for the latest Technical Bulletins, Participant Bulletins, and Appendix A.

The 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 MANAGER.

## 1. General Vehicle Description

1.A. Body Type:	<u>Two door coupe</u>	1.B. Engine Location:	<u>front</u>
1.C. Drive Wheels:	<u>rear</u>	1.D. Wheelbase:	<u>116.0"</u>
1.E. Induction Type:	<u>Natural</u>	1.F. Competition Weight:	<u>See Appendix A</u>
1.G. Weight Distribution:	<u></u>		

## 2. Engine

2.A.1. OEM Engine Designation:	<u>6.1 Hemi</u>	2.A.3. Number of Cylinders:	<u>8</u>
2.A.2. Maximum Displacement:	<u>6059cc</u>	2.A.5. Rev Limit Method:	<u></u>
2.A.4. Rev Limit:	<u></u>	2.A.7. Maximum Piston Stroke:	<u>3.579</u>
2.A.6. Max. Compression Ratio:	<u>11.5.1</u>	2.A.8.b. Hole Diameter:	<u>1.540"</u>
2.A.8. Restrictors:	<u></u>	2.A.10. Direction of Engine Rotation:	<u>clockwise</u>
2.A.8.a. Percentage Restriction:	<u></u>		
2.A.9. Cylinder Firing Order:	<u>18436572</u>		

### 2.B. Cylinder Block

2.B.1. Part Number:	<u>P5153896 mopar</u>	2.B.3. Maximum Cylinder Bore:	<u>4.055</u>
2.B.2. Cylinder Block Material:	<u>aluminum</u>		

### 2.C. Cylinder Head

2.C.1. Part Number:	<u>05037369AA mopar</u>
2.C.2. Cylinder Head Material:	<u>Aluminum</u>

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## 2.D. Valve System

2.D.1. Number of Valves Per Cylinder: 2.D.1.a. Intake: 1 2.D.1.b. Exhaust: 1  
2.D.2. Maximum Valve Head Diameter: 2.D.2.a. Intake: 2.080 2.D.2.b. Exhaust: 1.600

## 2.E. Intake Port Dimensions

2.E.1. At Intake Manifold Face 2.E.1.a. Height: stock 2.E.1.b. Width: stock  
2.E.2. Intake Port Work Allowed: none 2.E.2.a. Depth From Face:

## 2.F. Exhaust Port Dimensions

2.F.1. At Exhaust Manifold Face: 2.F.1.a. Height: stock 2.F.1.b. Width: stock  
2.F.2. Exhaust Port Work Allowed: none 2.F.2.a. Depth From Face:

## 2.G. Piston and Connecting Rod

2.G.1. Connecting Rod Length: 2.G.1.a. Stock: 2.G.1.b. Approved:  
2.G.2. Reciprocating Assembly Mass: 2.G.2.a. Stock: 1692 2.G.2.b. Minimum:  
2.G.3. Aftermarket Rods Allowed: 14460 manely 2.G.4. Aftermarket Pistons Allowed: 10023921451 race tec

## 2.H. Camshaft

2.H.1. Part Number: 112-00-11/06185-10 comp cam or 2.H.2. SCCA Profile Number:  
2.H.3. Rocker Arm Ratio: 1.6/1 2.H.4. Valve Actuation: Push rod / rocker arm  
2.H.5. Type of Cam Follower: Hydraulic Roller

## 2.I. Crankshaft

2.I.1. Part Number: 5037458bd mopar  
2.I.2. Stock Mass: stock 2.I.3. Minimum Mass:

## 2.J. Flywheel

2.J.1. Stock Ring Gear Diameter: 13 1/4 2.J.2. Flywheel Weight:

## 2.K. Forced Induction Intake System

2.K.1. Turbocharger Manufacturer and Model: \_\_\_\_\_  
2.K.2. Supercharger Manufacturer and Model: \_\_\_\_\_  
2.K.3. Compressor Inlet Diameter: \_\_\_\_\_ 2.K.4. Number of Compressors: \_\_\_\_\_  
2.K.5. Compressor Pinwheel Inlet OD: \_\_\_\_\_ 2.K.6. Turbine Pinwheel Inlet OD: \_\_\_\_\_  
2.K.7. Maximum Boost Pressure: \_\_\_\_\_  
2.K.8.a. Number of Intercoolers: \_\_\_\_\_ 2.K.8.b. Intercooler Locations: \_\_\_\_\_  
2.K.8.c. Intercooler Dimensions: \_\_\_\_\_  
2.K.9. Permitted Modifications \_\_\_\_\_  
2.K.10. Required MAP Sensor Location: \_\_\_\_\_  
2.K.11. Turbo Compressor Map: \_\_\_\_\_

## 2.L. Intake Manifold

2.L.1. Part Number: 05037509AC mopar  
2.L.2. Stock Port at Cylinder Head Face: 2.L.2.a. none 2.L.2.b. Width: \_\_\_\_\_  
2.L.3.a. Allow Port Match to Head: none 2.L.3.b. Port Matching Depth: \_\_\_\_\_  
2.L.4.a. Throttle Body Bore Dia.: 92mm 2.L.4.b. Throttle Body Part Number: \_\_\_\_\_  
2.L.5. Number of Throttle Bodies: 1 2.L.6. Butterflies per Throttle Body: 1  
2.L.7. Intake Manifold Material: aluminum 2.L.8. Manifold Pieces: \_\_\_\_\_  
2.L.9.a. Intermediate Port Matching Allowed: \_\_\_\_\_ 2.L.9.b. Depth from Face: \_\_\_\_\_

## 2.M. Required Engine Seal Locations

2.M.1. Valve Cover Seal #1: \_\_\_\_\_

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2.M.2. Oil Pan Seal #2: \_\_\_\_\_

## 2.N. Engine Miscellaneous:

Dry sump, cold air, Borla headers

## 3. Drivetrain

### 3.A. Transmission

3.A.1. Number of Forward Speeds: 6 3.A.2. Manufacturer: Tremec 6060  
3.A.3. Gear Ratios: 3.A.3.a. 1st: 2.97 3.A.3.b. 2nd: 2.1 3.A.3.c. 3rd: 1.3  
3.A.3.d. 4th: 1.0 3.A.3.e. 5th: .82 3.A.3.f. 6th: .721  
3.A.4. Gear Shift Pattern: H 3.A.5. Gear Engagement: syncromesh

### 3.B. All Wheel Drive System

3.B.1. Transfer Case Manufacturer and Model No.: \_\_\_\_\_  
3.B.2. Center Differential Type and Manufacturer: \_\_\_\_\_

### 3.C. Final Drive

3.C.1. Axle Ratio: 3.91

### 3.D. Drivetrain Miscellaneous

Rear diff cooler, aftermarket clutch

## 4. Suspension

4.A. Suspension Type: 4.A.1. Front: Coil over 4.A.1. Rear: Coil over

### 4.B. Suspension Miscellaneous

.

## 5. Chassis

5.A. See Technical Department for information

### 5.B. Chassis Miscellaneous

355 brake rotors

## 6. Body

6.A.1. Stock Coefficient of Drag: \_\_\_\_\_ 6.A.2. Total Frontal Area: \_\_\_\_\_  
6.B. Maximum Body Overhang: 2.B.1. Front: 74.5 2.B.2. Rear: 75.7  
6.C. Stock Body Materials: steel  
6.D. Maximum Body Width at Front: 75.7  
Wheelhouse: \_\_\_\_\_  
6.E. Maximum Body Width at Rear Wheelhouse: \_\_\_\_\_  
6.F. Permitted Rear Wing Design: APR GTC 500 wing

### 6.F. Body Miscellaneous:

TPN carbon- doors, hood, fenders, trunk, nose.  
Polycarbonate front,side, rear windows

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## Camshaft Profile

SCCA Profile Number: \_\_\_\_\_

Vehicle: \_\_\_\_\_

### Intake Lobe

Cam Lift (in)

0.010 in  
0.020  
0.030  
0.040  
0.050  
0.060  
0.070  
0.080  
0.090  
0.100  
0.150  
0.200  
0.250  
0.300  
0.350  
0.400  
0.450  
0.500

Maximum Lift: \_\_\_\_\_

### Exhaust Lobe

Cam Lift (in)

0.010 in  
0.020  
0.030  
0.040  
0.050  
0.060  
0.070  
0.080  
0.090  
0.100  
0.150  
0.200  
0.250  
0.300  
0.350  
0.400  
0.450  
0.500

Maximum Lift: \_\_\_\_\_

## Permitted Cam Tolerances

Camshafts used for this car must meet the specifications above within the following tolerances:

Duration at the seat	(From 0.020" lift to 0.030" lift)	+/- 6.5 degrees
Duration on flank	(From 0.100" lift to 0.100" before maximum lift)	+/- 4.0 degrees
Duration over nose	(From 0.100" before maximum lift up to maximum lift)	+/- 6.0 degrees
Maximum Lift	(This tolerance applies to maximum lift only)	+/- 0.005 in (0.127 mm)

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