This is a Racing Vehicle!! This vehicle is intended for off-road use ONLY and is not legal for on-road use!

The Boss 302S is a turn-key, or in this case a push button, racing vehicle and requires proper race preparation. Please read and understand the owner's guide and the detailed instructions for the various components supplied with your Boss 302S. Beyond component specific maintenance we recommend that you regularly "nut and bolt" your Boss 302S. This is a process of checking all the nuts, bolts, wiring, belts, hoses, tires, etc…on your vehicle. Your Race Car should be checked before every session of use…it is also equally important to inspect your vehicle after each use: this includes checking all mechanical components as well as checking for codes using your Ford Pro-Cal tool. In addition you should also review the data in your AIM data acquisition system outlined later in this manual. Please be diligent with the care of your vehicle!

Section 1 Ford Racing Boss 302S Specifications
Section 2 Driver Information / AIM system
Section 3 Ford Pro-cal Instructions
Section 4 Electrical Information
Section 5 Torque Sheets
Section 6 Brake/Chassis/Setup information
Section 7 Safety Equipment/Maintenance/Part numbers

In addition to this manual there are several file on this jump drive for your use:

- Sachs tuning guide
- Dynamics tuning guide
- DTC Error list
- Ford Racing wiring diagrams
- Aim Configuration File Boss302S FACTORYAIM.cfn (already preloaded on your car)
- Aim GPS track coordinates Boss_302_S_GpsMngr_2011_06_13_174017.mpl (already preloaded on your car)

Only after reviewing Pro-cal tool DTC codes and AIM data should further support be required. Please call the Ford Racing Tech Line at 800-FORD788.
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FORD RACING PERFORMANCE PARTS
P.O. BOX 490
DEARBORN, MI 48121
Section 1  Ford Racing Boss 302S Specifications

**Engine**
5.0L Ford Racing Motorsport Engine, based on 2012 Mustang Boss 302 engine
Ford Racing Oil Pan, M-6675-M50BR
Ford Racing Oil Filter, CM-6731-FL820
Engine Oil: Motorcraft 5W50 full synthetic or equivalent
Setrab ProLine Engine oil cooler
Upgraded electrical connectors
FR intake badge
Boss 302 fuel system
Upgraded cooling system

**Driveline**
6 speed transmission with Dual Disc Clutch
Torsen T2R Diff
3.73 gears

**Chassis**
Front: coil over dampers
Front lower control arms with delrin bushing kit
FR adjustable front anti-roll bar
Caster/Camber plates
Rear: coil over dampers
Rear tubular lower control arms with spherical bearings
FR anti-roll bar FR adjustable panhard bar
EPAS with unique Ford Racing calibration
FIA Spec 6 point roll cage
FR1 Muffler

**Electrical**
Lightened FR wiring harness
AMB Transponder
Switch plate – Start/ignition, aux switches

**Interior**
AIM MXL data acquisition system with GPS
Recaro HANS Pro Racer seat
Fire system with 2 nozzles
Quick release racing steering wheel
Window net
Safety system triangle nets
6 point racing harness
Master cut off switch

**Exterior**
FR front splitter
Rear adjustable CF wing
Unique Carbon hood with air extractors
Hood pins
19x9” and 19x10” wheels
Boss 302S graphics package
F/R tow hooks

**Brakes**
Brembo race 4 piston front brake system
2 piece 14” front rotors
PFC racing pads
Section 2  Driver Information/ AIM system

Your Boss 302S includes a MXL Pista which is a digital dash, gauge, and race data acquisition system featuring a tachometer, 8 analog inputs, 1 speed input, CAN/serial ECU connector, gear position indicator (From ECU), internal lateral G sensor, and lap timer.

With standard features including a wide, fully configurable display, six configurable alarm LED’s, backlight, and USB connector, the MXL is a stylish, powerful unit that re-defines the state of the art in data acquisition for performance vehicles.

It is very important that the AIM data is reviewed and retained....the software allows you to save information such as date, driver and track.  Also use the notes function after every download this will help you to recall information at a later time.

The MXL Pista is interfaced with the Boss 302S PCM and allows you to monitor:

Lateral Acceleration: From the head unit's accelerometer (use this to compare setups, conditions or driving technique)

Battery Voltage: Recommended alarm for this channel is less than 13.5 Volts

P_RPM (Engine RPM): From the Boss PCM

P_ACT : Inlet air charge temperature

P_VSPD (Vehicle speed): Averaged vehicle speed

P_PEDAL: Throttle pedal position in percentage

P_GEAR: Manual transmission gear position

P_CMP_FAIL_FLAG: Normally zero…non-zero value indicates a camshaft error (see camshaft status codes)

P_EPOS_STATUS: Normally zero…non-zero value indicates a crankshaft position error

P_COIL_ERROR_FLG: Normally zero…non-zero value indicates a issue

P_HSF: 0=Cooling fan off 1= cooling fan on

P_FUELUSED: Fuel totalizer, when used with the Channel report the signal range will return Liters of fuel used per lap

A_WS_FL:  The individual wheel speed of the Front Left wheel

A_WS_FR:  The individual wheel speed of the Front Right wheel

A_WS_RL:  The individual wheel speed of the Rear Left wheel

A_WS_RR:  The individual wheel speed of the Rear Right wheel

P_CMP_STAT_I1: Normally 1, other values indicate camshaft issues on Bank #1 intake

P_CMP_STAT_E1: Normally 1, other values indicate camshaft issues on Bank #1 exhaust
P_CMP_STAT_I2: Normally 1, other values indicate camshaft issues on Bank #2 intake

P_CMP_STAT_E2: Normally 1, other values indicate camshaft issues on Bank #2 exhaust

P_LAMBDA_1: The air fuel ratio of bank #1 (a static value of 1 indicates a missing or problematic O2 sensors)

P_LAMBDA_2: The air fuel ratio of bank #2 (a static value of 1 indicates a missing or problematic O2 sensors)

The Boss 302S specific add-on hardware/channels are Oil Temp, Oil pressure and a GPS module.

The Oil pressure should not drop below 30 PSI during normal operating conditions (except hot idle). Oil Temperature should not exceed 300 degrees Fahrenheit. The GPS module is included for lap timing without requiring a conventional beacon; it also provides the following channels:

GPS_SPEED: Absolute vehicle speed (useful when comparing individual speed during abs events)

GPS_NSAT: Number of Satellites in range

GPS LAT_ACC: Calculated Lateral Acceleration

GPS LONG_ACC: Calculated Longitudinal Acceleration

Your AIM system will come preloaded with most tracks in North America….you can add additional tracks using GPSMANAGER available on AIM’s web site.

RPM 2-STEP / PIT LANE SPEED CONTROL (PLSC)

The Boss 302S has a RPM 2-STEP feature that will maintain a set engine speed while the accelerator pedal is depressed. This feature is built into the powertrain control module (PCM) and does not require aftermarket components.

1) RPM Indicator
When the ignition switch is turned “ON”, the tachometer will momentarily display the current set point.

2) RPM Setting
The system utilizes a toggle switch in the center console to set the desired launch engine speed. Proper precautions have been made to ensure the setting mode cannot be entered unless the vehicle is stopped. To set the 2-STEP RPM, a simple 3 step process is required:

1. Depress the brake pedal with the engine running and simultaneously hold the toggle switch up for approximately 2 seconds. The AIM tachometer will display the current 2 STEP set point. After the tachometer sweeps and is displaying the current set point, release the toggle switch. The brake pedal can also be released and is not necessary for the rest of the procedure.
2. The RPM point is adjusted by moving the toggle switch up or down. The RPM will change in 100 RPM increments. The user range for the launch control is 2000 rpm to 7000 rpm and the PCM will not allow any settings beyond these limits.

3. Once the desired launch control set point is achieved, press the "PLSC" button. The AIM tachometer will again sweep to 8000 rpm, then back to the desired set point, and finally back to the current engine speed. The system set point is now stored in the PCM's memory and will maintain this value until it is changed again even if the power is removed from the PCM.

PIT LANE SPEED CONTROL (PLSC)

The Pit lane speed control is adjusted identically to the 2-STEP….however instead of holding the toggle switch up…hold the toggle switch down to set the PLSC. The information will be displayed on the speed readout of the MXL. After setting the desired speed once again store the setting by depressing the PLSC button on the steering wheel.

Section 3  Ford Pro-cal Instructions

Prepare ProCal II:

STEP 1: Remove the ProCal II from its plastic bag. Peel back the rubber boot from the lower portion of the ProCal II to expose the MMC socket. Remove the MMC from its plastic case. Insert the MMC into the socket of the ProCal II with the label of the MMC facing the same direction as the ProCal II display screen. Return the rubber boot to its original position to cover the MMC.

STEP 2: Remove the J1962 cable from its plastic packaging. Insert the DB25 connector of the cable into the top of the ProCal II. Finger-tighten the retaining screws of the DB25 so that it is firmly fastened to the ProCal II.

STEP 3: Make sure your vehicle’s battery is fully charged (at least 12.0 volts) and all accessories (radio, interior fan, headlights, etc.) are off. If you are unsure if your vehicle’s battery is fully charged, connect a battery charger prior to beginning the programming process.

CAUTION: If your ProCal II aborts programming due to low voltage or interrupted programming process, you may be required to have the vehicle towed to an authorized Ford Dealer to reprogram your PCM back to its original stock calibration.

STEP 4: Locate the onboard Diagnostic Link Connector (DLC) at the passenger side air vent.

STEP 5: Connect your OBDII connector of your ProCal II tool to the vehicle DLC.

Note: For the first time the ProCal II is plugged in, you may receive a message indicating BootLoader firmware is updating. The RED error light will be on while the firmware is updating. This is normal for first time power-up. Do not disconnect the ProCal II during this process once it has begun.

STEP 6: Turn the ignition key of your vehicle to the ON position….move to the diagnostic menu
Diagnostics Menu Structure:
Read DTC
Clear DTC
Select Protocol
Select Module
Other Tools

- Select Protocol
  - HSCAN-ISO14229 (Boss 302S PCM & ABS)

- Select Module
  - Select PCM
  - Select ABS

- Read DTC (Diagnostic Trouble Codes)
  - Once Module and Protocol are set will return PCM and ABS error codes.

- Clear DTC
  - Once Module and Protocol are set will clear selected module codes.

- Other Tools
  - KOEO-Key ON Engine OFF Diagnostic self test, warning fan will activate as part of self test
  - KOER-Key ON Engine Running Diagnostic self test, you must press the brake and turn steering wheel once during this test.

Section 4 Electrical Information

Additional information about the Boss Crate Motor harness used on the 302S can be found on the Ford Racing website at http://www.fordracingparts.com/download/instructionsheets/FordInstShtM-6017-A504V_A54SC.pdf

OBDII Connector

Located on the passenger side air vent.
The Controls Pack Power Distribution Box (PDB) is responsible for base engine electrical functions and is located under the passenger side air bag cover. Fuse and relay locations in this PDB are indicated on the circuit board.

Refer to the circuit board picture below for clarification of fuse/relay locations in the Controls Pack PDB.
Vehicle Power Distribution Box

The Vehicle PDB shown in the following picture contains the fuses/relays used for headlights, taillights and other vehicle functions. This PDB is located in the passenger side kick panel.

Fuse and relay locations for this PDB are shown below.
**Future Expansion**

Three fused 10Amp circuits are available on the center console for addition of customer accessories such as data loggers, radios, etc. These circuits can be accessed by removing the center console and adding the circuit to the output side of the desired switch. One of the circuits uses 12V Hot At All Times (HAAT) power while the other two circuits interface to Run/Start (R/S) Power and will only provide power when the ignition switch is in the ON position.

Please find the individual wiring diagrams on the FR thumb drive.
### Section 5  Torque Sheets

#### Bolt Torque Spec. Sheet

<table>
<thead>
<tr>
<th>Location:</th>
<th>Type of Fastener</th>
<th>Torque in Nm</th>
<th>Torque in Ft Lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Mount to Crossmember</td>
<td>Bolt</td>
<td>55.0</td>
<td>40.5</td>
</tr>
<tr>
<td>Engine Mount to Engine Block Bracket</td>
<td>Nut</td>
<td>62.5</td>
<td>46.1</td>
</tr>
<tr>
<td>Engine Block Bracket to Engine Block</td>
<td>Bolt</td>
<td>55.0</td>
<td>40.5</td>
</tr>
<tr>
<td>Flywheel to Crank</td>
<td>Bolt</td>
<td>20.0 + 60 degrees</td>
<td>10 + 60 degrees</td>
</tr>
<tr>
<td>Pressure Plate to Flywheel</td>
<td>Bolt</td>
<td>62.5 + 60 degrees</td>
<td>46.1 + 60 degrees</td>
</tr>
<tr>
<td>Transmission Bellhousing to Engine</td>
<td>Bolt</td>
<td>47.5</td>
<td>35.0</td>
</tr>
<tr>
<td>Starter Motor to Transmission Bellhousing</td>
<td>Bolt</td>
<td>25.0</td>
<td>18.0</td>
</tr>
<tr>
<td>Transmission Mount to Transmission</td>
<td>Bolt</td>
<td>47.5</td>
<td>35.0</td>
</tr>
<tr>
<td>Transmission Mount to Body</td>
<td>Bolt</td>
<td>62.5</td>
<td>46.1</td>
</tr>
<tr>
<td>Transmission Lever to Transmission</td>
<td>Bolt</td>
<td>40.0</td>
<td>29.5</td>
</tr>
<tr>
<td>Shift Lever Mount to Body</td>
<td>Nut</td>
<td>10.5</td>
<td>7.8</td>
</tr>
<tr>
<td>Driveshaft to Transmission</td>
<td>Bolt</td>
<td>109.0</td>
<td>80.4</td>
</tr>
<tr>
<td>Driveshaft Mid-Bearing to Body</td>
<td>Bolt</td>
<td>47.5</td>
<td>35.0</td>
</tr>
<tr>
<td>Driveshaft to Rear Axle</td>
<td>Bolt</td>
<td>55.0</td>
<td>40.5</td>
</tr>
<tr>
<td>H-Pipe Flange to Manifold</td>
<td>Bolt &amp; Nut</td>
<td>40.0</td>
<td>29.5</td>
</tr>
<tr>
<td>H-Pipe to Tail Pipe Clamp</td>
<td>Nut</td>
<td>47.5</td>
<td>35.0</td>
</tr>
<tr>
<td>Tailpipe to Muffler Clamp</td>
<td>Nut</td>
<td>30.0</td>
<td>22.1</td>
</tr>
<tr>
<td>Steering Rack to Crossmember</td>
<td>Bolt</td>
<td>115.0</td>
<td>84.8</td>
</tr>
<tr>
<td>Jam Nut, Outer to Inner Tie Rod</td>
<td>Nut</td>
<td>55.0</td>
<td>40.5</td>
</tr>
<tr>
<td>Outer Tie Rod to Spindle</td>
<td>Nut</td>
<td>80.0</td>
<td>59.0</td>
</tr>
<tr>
<td>Caliper Bracket to Spindle</td>
<td>Bolt</td>
<td>115.0</td>
<td>84.8</td>
</tr>
<tr>
<td>Caliper to Caliper Bracket (Front)</td>
<td>Stud</td>
<td>47.5</td>
<td>35.0</td>
</tr>
<tr>
<td>Spindle to Coilover</td>
<td>Bolt</td>
<td>225.0</td>
<td>165.9</td>
</tr>
<tr>
<td>Coilover to Camber Plate</td>
<td>Nut</td>
<td>103.0</td>
<td>75.9</td>
</tr>
<tr>
<td>Camber Plate to Body</td>
<td>Bolt &amp; Nut</td>
<td>35.0</td>
<td>25.8</td>
</tr>
<tr>
<td>Wheel Hub to Spindle</td>
<td>Nut</td>
<td>340.0</td>
<td>251.0</td>
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<tr>
<td>Lower Control Arm to Crossmember PT3 (Front)</td>
<td>Bolt</td>
<td>210.0</td>
<td>154.8</td>
</tr>
<tr>
<td>Lower Control Arm to Crossmember PT4 (Front)</td>
<td>Bolt &amp; Nut</td>
<td>185.0</td>
<td>136.4</td>
</tr>
<tr>
<td>Lower Control Arm to Spindle PT6</td>
<td>Bolt &amp; Nut</td>
<td>103.0</td>
<td>75.9</td>
</tr>
<tr>
<td>Sway Bar Link to Coilover</td>
<td>Nut</td>
<td>115.0</td>
<td>84.8</td>
</tr>
<tr>
<td>Sway Bar Link to Sway Bar</td>
<td>Nut</td>
<td>115.0</td>
<td>84.8</td>
</tr>
<tr>
<td>Sway Bar Mount to Crossmember</td>
<td>Nut</td>
<td>70.0</td>
<td>51.6</td>
</tr>
<tr>
<td>Crossmember to Body</td>
<td>Bolt &amp; Nut</td>
<td>115.0</td>
<td>84.8</td>
</tr>
<tr>
<td>Pencil Brace to Crossmember</td>
<td>Nut</td>
<td>47.5</td>
<td>35.0</td>
</tr>
<tr>
<td>Drop Bracket to Axle</td>
<td>Bolt &amp; Nut</td>
<td>115.0</td>
<td>84.8</td>
</tr>
<tr>
<td>Drop Bracket to Coilover</td>
<td>Bolt &amp; Nut</td>
<td>115.0</td>
<td>84.8</td>
</tr>
<tr>
<td>Coilover to Top Clevis Bracket</td>
<td>Bolt &amp; Nut</td>
<td>115.0</td>
<td>84.8</td>
</tr>
<tr>
<td>Top Clevis Bracket to Body</td>
<td>Nut</td>
<td>40.0</td>
<td>29.5</td>
</tr>
<tr>
<td>Axle to 3rd Link</td>
<td>Bolt &amp; Nut</td>
<td>175.0</td>
<td>129.0</td>
</tr>
<tr>
<td>3rd Link to Body Bracket</td>
<td>Bolt &amp; Nut</td>
<td>175.0</td>
<td>129.0</td>
</tr>
<tr>
<td>3rd Link Body Bracket to Body Forward</td>
<td>Bolt</td>
<td>440.0</td>
<td>325.0</td>
</tr>
<tr>
<td>3rd Link Body Bracket to Body Rearward</td>
<td>Bolt</td>
<td>115.0</td>
<td>85.0</td>
</tr>
<tr>
<td>Caliper to Axle (Rear)</td>
<td>Bolt</td>
<td>103.0</td>
<td>75.9</td>
</tr>
<tr>
<td>ABS Sensor to Hub</td>
<td>Bolt</td>
<td>15.0</td>
<td>11.0</td>
</tr>
<tr>
<td>Lug Nut</td>
<td>Nut</td>
<td>135.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Section 6  Brake/Chassis/Setup information

Brakes

Your Boss 302S comes equipped with Brembo road race brakes, a Ford Racing brake booster, PFC racing pads and a TRW Race ABS system that is uniquely tuned to the car. Changing any of these components from the intended design will degrade brake system performance. This could result in increased stopping distances or degraded pedal feel.

Dampers

The base 2-way dampers are manufactured by SACH. These were originally used on the FR500S and were retuned for the Boss 302S.

The Optional 3 way dampers are Dynamics manufactured by Multimatic, these are uniquely tuned to the Boss 302S.

These are serviced by:

Carl Haas Automobile Imports, Inc
Contact Alan O'Leary
500 Tower Parkway
Lincolnshire, IL 60069

Phone: (847) 634-8200
Fax: (847) 634-8208

Both the Sachs and Dynamics tuning guides are on this FR thumb drive.

Chassis Setup Specifications and Procedures

The following setup specifications and procedures are recommended starting points for the BOSS 302S. Optimal ride height and alignment will vary by track.

Preparing the vehicle for setup:

- Fill the vehicle with fuel. The saddle type fuel tank in this vehicle does not maintain even fuel levels between the two sides, so the only way to ensure consistent left/right balance and setup is to fill the tank.
- Make sure that the vehicle is setup in as-raced conditions, with all extra equipment and ballast installed.
- Install an unused (or clean, lightly used) set of tires if possible; the variation in diameter and stuck-on rubber bits typical of used tires can affect corner weights. Set tire pressures to 30psi, or another nominal setting that is the same on both axles.
- Ballast the driver's seat to simulate the driver's weight, or use the actual driver (if you have a very patient driver with nothing better to do)
- Optional - setting the shocks to full soft in compression and rebound will help the car to settle more consistently and will result in a more accurate setup.
- Make sure that the vehicle has been rolled forward in a straight line and bounced up and down to settle the suspension before making any measurements.
Changes to ride heights, corner weights, and alignment will have effects on each other. Getting these settings correct is an iterative process. If you are making a major change or a new installation/re-installation, make a rough setup of height and alignment before starting with fine adjustments.

**Measuring and setting front ride height:**

- Front ride height is defined by the "C" dimension, which is the difference in height between the inner pivot of the front lower control arm and the bottom of the balljoint can. This measurement is used because it is a consistent measure of suspension position, independent of wheels, tires, bodywork, etc.
- Measuring the height of the center of the balljoint can be difficult because it is inside the wheel. One method is to use a dial indicator base with a pointer, setting the base on a ground reference and setting the pointer on the center of the can; with the pointer locked in, remove the base/pointer and set it on a flat surface and measure the height. This measurement is independent of ride height, and will not change as long as the same wheel/tire/pressure is used, so it only needs to be measured once per setup session.
- The inner pivot height can be measured with a tape measure from the ground to the center of the bolt.
- Before adjusting ride height, jack up the corner to relieve the spring pressure and use the threaded perches on the struts to adjust ride height. Each full turn of the perch is a change of approximately 1.5mm.

"C"

**Dimension Measurement:**

Front "C" Dimension = 11mm
(Inner pivot higher than balljoint)
Measuring and setting rear ride height:

- Rear ride height is defined by the “D” dimension, which is the distance between the top of the axle tube and the flat surface on the inboard side of the spring pocket. This measurement is used because it is a consistent measure of suspension position, independent of wheels, tires, bodywork, etc.

- A tool can be easily made to help make this measurement, such as two flat pieces of metal with a bolt and wingnut to lock them together at a given setting. This can be used to measure the current height (setting it on the vehicle, then removing and measuring the length), or it can be set to the desired height and used as a "go/no-go" gauge.

- Before adjusting ride height, jack up the corner to relieve the spring pressure and use the threaded perches on the struts to adjust ride height. Each full turn of the perch is a change of approximately 1.5mm.

Each ride height adjustment can have an effect on the other three, so it may take several iterations to get all 4 corners set.
**Adjusting corner weights:**
- Once initial ride heights are set, use corner scales to measure and adjust corner weights so that the diagonal (RF+LR and LF+RR) weights are 50% (OR AS CLOSE TO 50% AS POSSIBLE). The "Cross Weight %" (shown on many scales) is the RF+LR Percentage.
- It is recommended that all corner weight adjustments be made at the rear of the car, raising or lowering the appropriate side as needed. (See chart)
- Note that the process of setting corner weights will change the ride heights and they will no longer be equal side-to-side.

<table>
<thead>
<tr>
<th>To RAISE Cross Weight % (RF+LR)</th>
<th>To LOWER Cross Weight % (RF+LR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF LOWER</td>
<td>RF RAISE</td>
</tr>
<tr>
<td>LR RAISE</td>
<td>RR LOWER</td>
</tr>
</tbody>
</table>

**Adjusting alignment (In this order):**
- Set caster. Recommended setting is typically 7° - 7.5°, but equal on both sides;
- Set Camber on both sides to -3.0°
- Set Toe to 0 degrees or 1/8" total toe out on 30" toe plates
General Safety items

The seat belts and window nets in the Boss 302S are NOT PRE SET. Before driving the vehicle, set belt lengths. They will need to be adjusted for each individual that races this vehicle.

Roll cage – Roll bar padding (not included) should be added to any areas the driver could come in contact with.

Fire system – pin should be pulled before each time out on track and replaced when vehicle comes in.

Maintenance

Engine: M-6007-M50BR
The engine is a production 2012 Boss 302 engine with the exception of the oil pan and engine harness...all service information and parts pertaining to a production 2012 Boss 302 engine applies.

Oil pan: M-6675-M50BR

Engine Wiring harness
This harness is a production 5.0L Boss harness that is modified by Precision Race Services (PRS). The four camshaft VCT phasers (cam covers, front of engine), 4 camshaft position sensors (cylinder head, rear of engine) and the crankshaft position sensor (RH rear of engine) connection are modified by Precision Race Services.

Please contact PRS for spares or service parts:

Precision Race Services
16749 Dixie Highway Suite 9
Davisburg, MI 48350
(248) 634-4010 office
(248) 634-4014 fax

Fuel
(WARNING! USING A LOWER OCTANE FUEL WILL CAUSE PERMANENT DAMAGE TO THE ENGINE)

Fuel Filter
The Fuel filter is integral to the fuel tank and non-serviceable.

Engine Oil
Motorcraft 5W-50 Full Synthetic XO-5W50-QGT
Replace every 4 hours on-track usage
The recommended oil level is the bottom of the crosshatching of the dipstick (approximately 14 quarts)

Oil Filter
Ford Racing M-6731-FL1A (case of 12) or CM6731-FL820 (individual)
Replace every 4 hours of on-track usage
Regularly check the catch can for oil located on the passenger side rear of the engine compartment.
Capacity: 13 Quarts

Engine Coolant
Motorcraft Premium Gold VC-7B
50/50 Mix Ratio
Change annually and follow guidelines on container for freeze protection
Use only distilled water!
Transmission Fluid  
XT-2-QDX Mercon ATF  
Replace every 4 hours on-track usage  
Capacity: 3.46L

Clutch:  CR3V-7B546-AA  2012 GT500 Dual Disc  
Note refer to factory service manual when servicing.

Differential Oil  
75W140 Synthetic Gear Lube Motorcraft XY-75W140-QL  
Replace every 4 hours on-track usage  
Capacity: Fill to bottom of filler hole.

Brake Fluid  
Use only High Performance DOT3 PM-1-C  
Bleed brakes after each session. Replace Fluid after each event

Wheel/Tires  
Front: Pirelli P Zero 255/40ZR19  
Rear: Pirelli P Zero 285/35ZR19  
Wheel torque: 95 ft-lbs

For World Challenge competition the following wheel and tires are required....  
Wheels 18x10” Ford Racing M-1007-R1810 (requires unique lug nuts)

<table>
<thead>
<tr>
<th>Part Number:</th>
<th>Allstar-ALL44102</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Photo:</td>
<td>LUG NUTS 1/2-20 STEEL 10PK</td>
</tr>
</tbody>
</table>

Tires: Pirelli 305/645-18 P Zero Race Slick

Air Filter  
FA1897-Motorcraft  
Replace after every 12 hours of usage

Spark Plugs  
BR3E-12405-DA (Heat Range 1) or M-12405-M50 (Heat range 0)  
SP519-Motorcraft  
GAP= 0.04 (1.0 mm)  
Replace after every 6 hours of usage

Fuel Pressure,  
55±2 psi gauge, fuel pump on and engine off
## Part number listing

<table>
<thead>
<tr>
<th>Part description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Button, Start Engine</td>
<td>M-11572-GT</td>
</tr>
<tr>
<td>Shock Mount, Rear</td>
<td>M-18197-A</td>
</tr>
<tr>
<td>Booster, Race Brake</td>
<td>M-2005-R</td>
</tr>
<tr>
<td>Pad, Rear Brake Kit</td>
<td>M-2200-R</td>
</tr>
<tr>
<td>Differential</td>
<td>M-4204-T31H</td>
</tr>
<tr>
<td>Kit, Ring &amp; Pinion Install</td>
<td>M-4210-B1</td>
</tr>
<tr>
<td>Crossbrace, Trans Cooler Air Scoop</td>
<td>M-5025-MBR</td>
</tr>
<tr>
<td>Muffler, SVT Kit</td>
<td>M-5230-MGTCA1</td>
</tr>
<tr>
<td>Bar, Front Anti Roll</td>
<td>M-5490-A</td>
</tr>
<tr>
<td>Bar, Rear Anti Roll</td>
<td>M-5490-A</td>
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<tr>
<td>Adaptor, Remote Oil Filter (On Engine Block)</td>
<td>M-6881-M50</td>
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<tr>
<td>Shifter Assembly</td>
<td>M-7210-B</td>
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<tr>
<td>Lever, Shift</td>
<td>M-7213-J</td>
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<tr>
<td>Radiator Assembly</td>
<td>M-8005-MGT</td>
</tr>
<tr>
<td>GT500 Transmission</td>
<td>AR3V-7003-BC</td>
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</tbody>
</table>