

Chassis Report

Porsche GT3 RS 2007 chassis number WPOZZZ99Z7S7****

The report objective is to present the results of a chassis inspection of the car and present recommendations for reparative works.

The inspection comprised of visual, physical and measured elements.

The car is reported by the client to be repaired Category D. It is used exclusively for track sport, road legal, subject to MOT and driven to events.

The report shows a summary of the inspection in terms of:-

1. Monocoque / subframe body condition
2. Suspension underpinnings condition
3. Measured toe and camber curves

The vehicle manufacture date was used as a key identifier of parts that had been changed or otherwise. Although this is flawed as second-hand or new parts have been used. The manufacture date is pinned at December 2006 based on evidence from date marks on supply chain length of 1week.

Reference has also been made to pictures of the recovered car post its accident. There is evidence of significant damage to roof, nearside rear, nearside front, and offside rear wheel locations (chassis perspective), although there was other significant panel damage.

The report is not a substitute for the official Body Jig results submitted to the DOT by the repairing agent.

Monocoque / subframe body condition

The inspection covered the inner mount points for the front and rear subframes and the front and rear dampers.

The rear subframe is accurately located on the chassis rails with no evidence of movement. The 2 major subframe components are original dated weeks 45 2006.

Evidence shows the front subframe having been removed. The subframe is pinched slightly at its rear fixing. The front subframe is original and undamaged from visual

inspection. It has original factory wax covering. The mount points for steering rack and track control arms appear to be visually sound and not deformed.

Front top mounts for dampers are original and are not deformed by any accident damage.

The longitudinal chassis rails along both sides of the car are original, undamaged and unrepaired.

Suspension underpinnings condition

All wheels are of the period and have not been repaired so are either second-hand or new. Date stamps for 3 wheels are for December 2006, with the left front dated January 2007.

Right front wheel location

1. Damage to wheel bolt having rolled threads – replace
2. 5mm spacer not required on RS
3. Original wheel hub carrier, disk, calliper and damper dated Months 9 and 10 2006
4. Top mount bearing is knocking in vertical plane – replace. Evidence of top nut kneeling on mount surround
5. Top mount is in stock road position and hasn't been set to race prior.
6. 7mm spacers correct in toe control arm (tca).
7. Original tca dated month 12 2006. Recommend replace as wheel has had trauma indicated by top mount and casting balljoint may be weak. Vital part of car safety

Right rear wheel location

1. New rear wheel hub carrier fitted dated Month 10 2004. Assume that new wheel bearing fitted also.
2. New track control arm fitted with correct 1mm shim, although fitted incorrect with diagonal control arm set to position 2 – race castor
3. Original rear PASM damper fitted dated week 32 2006, no leaks detected, nor external signs of damage

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4. Toe control arm week 40 2006, original 997 part, visibly twisted – recommend replace
5. Original drive shaft dated 18.11.06, anticipate vibration issues if cv joints are damaged
6. Original upper control arms dated month 8 2006, undamaged
7. Antiroll bar drop link fitted to position 4 – correct for model year
8. 5mm of rear brake pad remaining – recommend replacement
9. Tyre outer shoulder catching on wheel arch apex. Wheel arch return/lip is too wide. Recommend body work to remove wheel arch lip as per original.

Left rear wheel location

1. Upper control arm second-hand dated Month 6 2004 and Month 7 2003
2. Rear control arm second-hand dated week 25 1999 – recommend replace due to wear and unknown origin. Vital part of car safety. Toe position set incorrect
3. New damper fitted dated wk0 2008
4. Original driveshaft date 01.07.04, expect vibration and/or CV joint failure
5. TCA replaced dated Jan 2007. Camber position set incorrect

Left front wheel position

1. Original wheel carrier, damper, brake disk, caliper and wheel bearing.
2. Minor impact damage to tca and caliper
3. Track control arm deformed at balljoint
4. Second-hand track rod end fitted week 1 1999 – recommend replacement vital part for car safety
5. Front arb droplink set to position 4 of 4 correct for car model year
6. Original PASM damper shows signs of oil leak from base and on damper cylinder beneath bellows. Recommend observe performance

7. Upper mount bearing loose, shows sign of large impact, kneeling of nut on casting

Other observations

1. Steering rack original, showing signs of oil misting leaking from steering gaiter adjacent to the left front wheel. Suspected rack damage to rack, bearing oil seal
2. Steering rack central position shown by input shaft collar and casting abutment, as per factory, steering wheel and column not interfered with.
3. Both rear arch lips are wider than factory, recommend arch modification/rolling to prevent damage / cutting to wheel
4. Rear transmission undertray missing – recommend replace at earliest to ensure adequate transmission cooling
5. Rear Brake ducts missing from both rear diagonal control arms- recommend replace to reduce brake wear

Measured to and camber curves

See separate report for initial geometry findings.

In summary:-

1. Rear left camber is well out of specification and would have caused rear grip issues in right turn
2. Rear left toe is out of specification and will have caused issue in handling
3. Rear right camber and toe settings although correct positioning are due to recent hub carrier replacement
4. Front cambers are generally good and in / near specification
5. Front cross castor is very large (difference) although each castor is in specification. Recommend adjustable thrust arm (castor) bushings to synchronise castors to the same value
6. The front left toe in turn value is low, indicating damage to steering rack, inner or outer rod and damage to

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- Ackerman arm on wheel hub carrier.
Recommend attempt to reposition lower subframe to equalise otherwise no action as just out of specification. Will cause minor wheel scrub on turn.
7. KPI and included angle results are very good considering extent of damage, confirming the front lower subframe / top mount / wheel carrier integrity
 8. Ride heights within specification

Camber and toe curves*Front Axle*

Maximum Negative Camber

Both struts are able to reach maximum negative camber available for the ride height of circa 115mm.

Left Camber -ve 1deg 53minutes

Right Camber -ve 2deg 04minutes

Left toe change 2.9mm

Right toe change 2.9mm

Maximum Positive Camber

Both struts are able to reach similar (factory) cambers at factory ride height (115mm)

Left Camber -ve 1deg 18minutes

Right camber -ve 1deg 06minutes

Right toe change 5.3mm

Left toe change 5.5mm

*Rear Axle (note** right rear castor incorrect during test due to previous incorrect fitting)*

Both wheels were able to achieve symmetry both at toe and camber eccentrics at the factory camber and Toe of -ve 1deg 30minutes and 1.8mm respectively.

Test1 22.5deg toe change at eccentric

Right toe change to -1.8mm

Left toe change to -1.9mm

Test 2 22.5deg toe change at eccentric

Right toe change to +4.3mm**

Left toe change to +6.1mm

Test 3 22.5deg camber change at eccentric

Right camber change to -ve 1deg 43minutes

Right toe change to -ve 2.00mm**

Left camber change to -ve 1deg 46 minutes

Left toe change to -ve 2.4mm

Test 4 at 1.8mm toe each read cambers.
Left -ve 1deg 50minutes, Right -ve 1 deg 50minutes

Test 5 at -ve 2deg camber read toes, Left -ve 0.8mm, right -ve 0.7mm**

Test 6 at -ve 2deg camber change toes to +1.8mm each read cambers

Left camber -ve 2deg 4minutes, right -ve 2deg 5 minutes

Test 7 at 1.8mm toe each, increase -ve camber to -ve 2deg 20minutes

Left toe -ve 0.9mm, right toe -ve 1.3mm**

Test 8 at -ve 2deg 20minutes camber

increase toe to 1.8mm read cambers

Left camber -ve 2deg 20minutes

Right camber -ve 2deg 21minutes

Conclusions and recommendations

Overall the car performs fairly within the factory tolerances.

For safety reasons, both front track control arms are recommended replaced.

For safety reasons the left front track rod end should be replaced.

For safety reasons both rear track control arms should be replaced.

For safety reasons two wheel bolts should be replaced.

For performance reasons both front top mounts should be replaced due to the damage trauma shown and failure of bearings.

The front left damper performance should be monitored during test drive under sport conditions.

The cars front geometry falls within factory specifications and the camber toe curves are correct. Of minor note is the front right castor and front left toe in turn which fall slightly out of factory specification.

The rear axle geometry falls within factory specification and the camber toe curves



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indicate integrity** subject to castor for right rear being corrected.

The steering rack is original. It has been subjected to large forces (identified by trauma to wheel/suspension). Anticipation of early rack wear and seal failure should be made.