Midlife Classics

Classic Auto Restoration, Upgrades, Service & Sales

Princeton, TX
972-736-3560
www.midlifeclassics.com

1970 OPEL GT

Restoration Project

Midlife Classics inc.

Classic & Exotic Car Restoration and Sales

2351 CR-447, Princeton, TX 75407

Phone: 972-736-3560
Fax: 972-736-3561
www.midlifeclassics.com

Vincent Kitts
11100 Concord Woods
Knoxville, TN 37934

June 28, 2010

Dear Vince,

Now that the date of delivery of your restored Opel GT is finally here, I'd like to take the opportunity the thank you for entrusting your classic to this young upstart company. Your car has the unique distinction of being the first restoration project to be contracted by Midlife Classics, and I hope that you are as happy with what you will be driving home today as I am proud of what we have accomplished.

It has been a long journey for us, but for you the real fun is just about to start. Your patience and financial commitment have resulted in one very fine classic that is destined to pay you back with years of driving pleasure and more "thumbs up" than you'll be able to count.

This portfolio is both a record of the work that has gone into your treasure, and a guide to getting the most out of your investment. I suggest that you review it at your earliest opportunity and keep it in a safe place. If, for any reason, you ever need to take it to another shop, everything a mechanic would need to know about your GT that sets it apart from others is contained within this portfolio. You will also find a CD enclosed. On it you will find a copy of every photo that has been taken of your car along with copies of virtually every document created and every research item collected during the restoration process.

The amount of time we spend on a project like this makes the final "product" seem like a part of the family, and – by extension – so are you. I hope that you can feel free to contact me with any questions you may have. Working with you has been a genuine pleasure.

Warmest regards,

Robert Carroll
President
Midlife Classics, Inc.

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1970 Opel GT

for

Vincent Kitts

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1970 GT

PROJECT PHOTO GALLERY

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< As Received >


OPEL
I62 AP0

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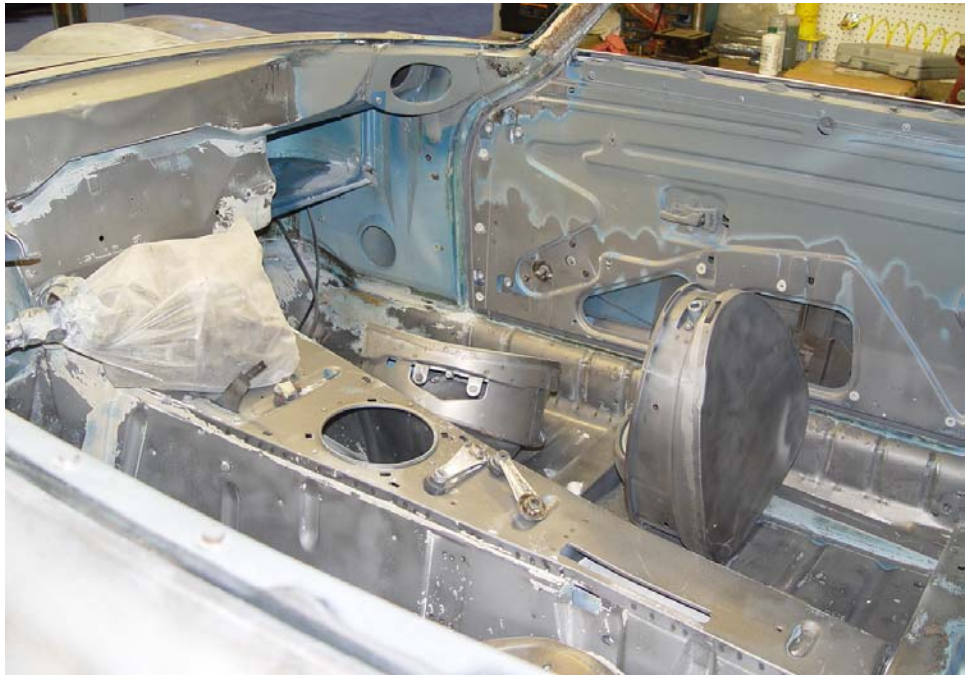
PROJECT PHOTO GALLERY

PHASE I - Disassembly & Strip


OK Vince. If you're going to try to save money by helping out, please place the end of the screwdriver on a screw, not into an empty hole.



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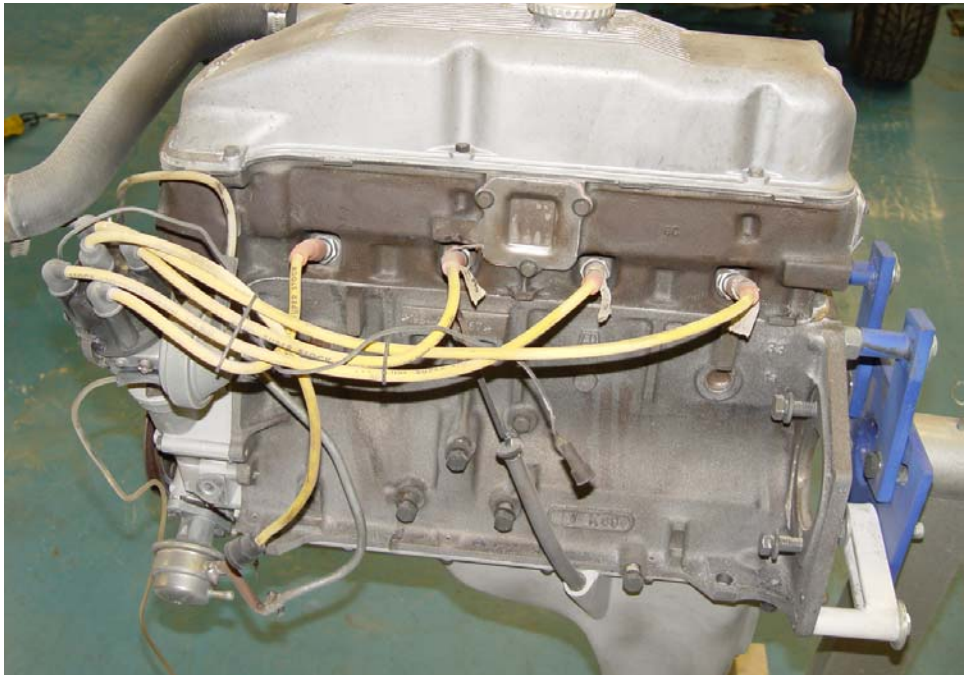
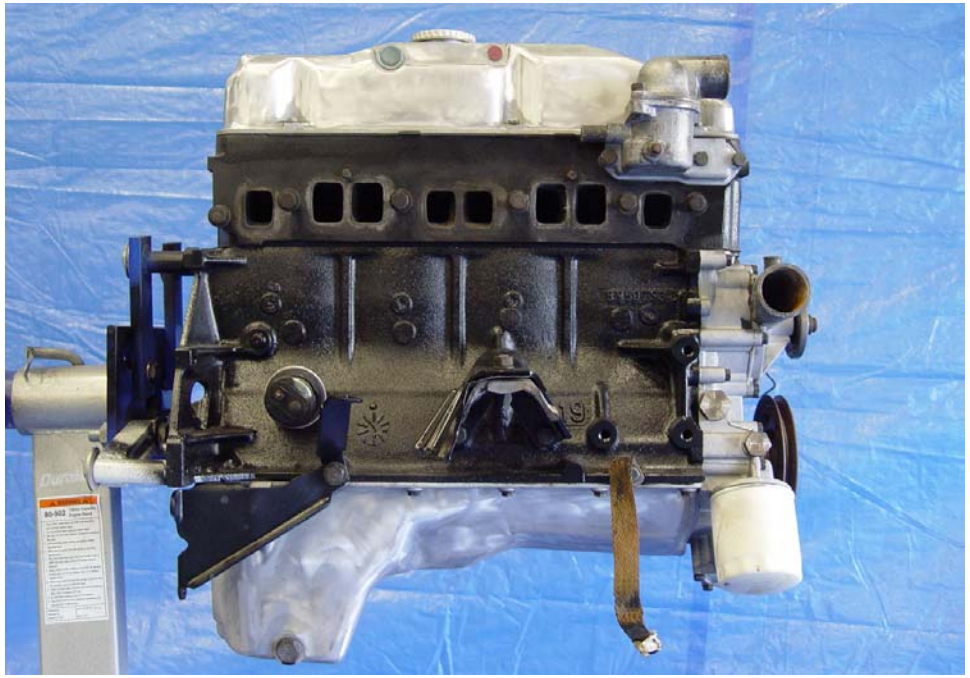
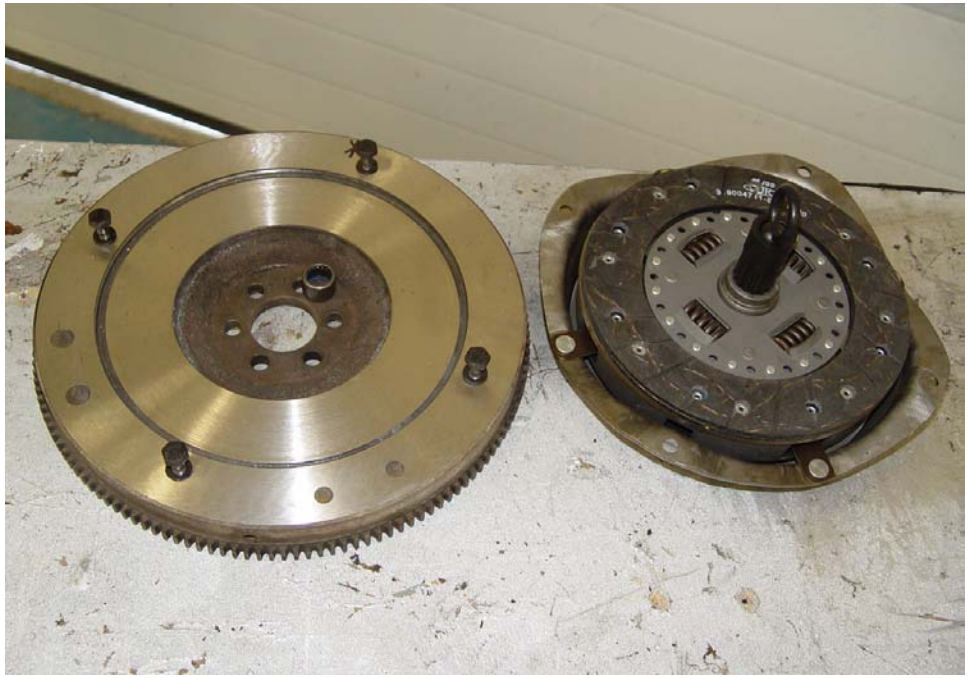
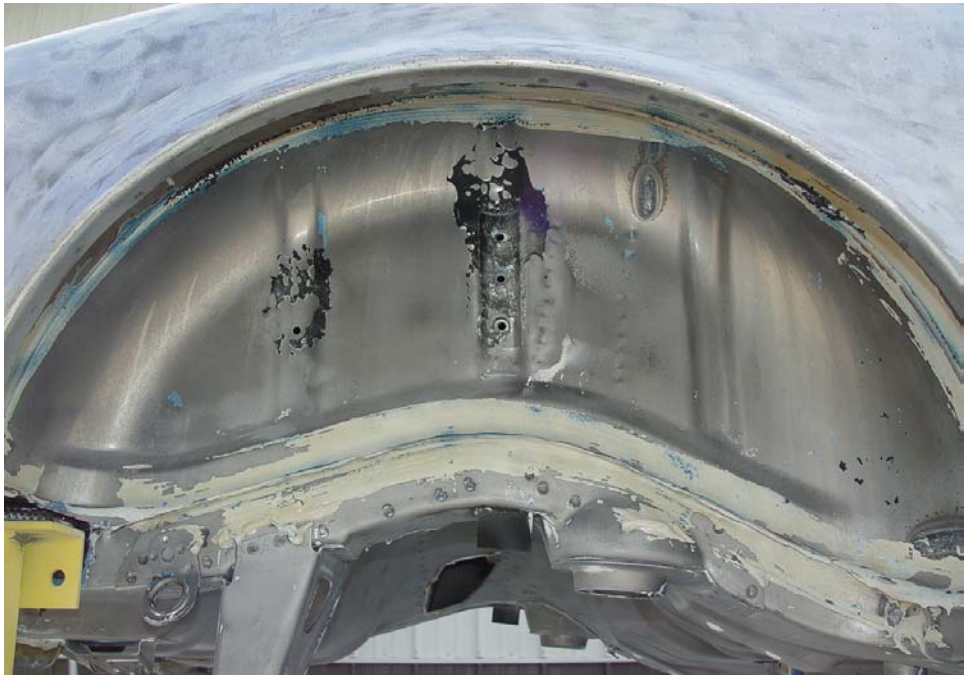
PHASE II - Body & Parts Preparation

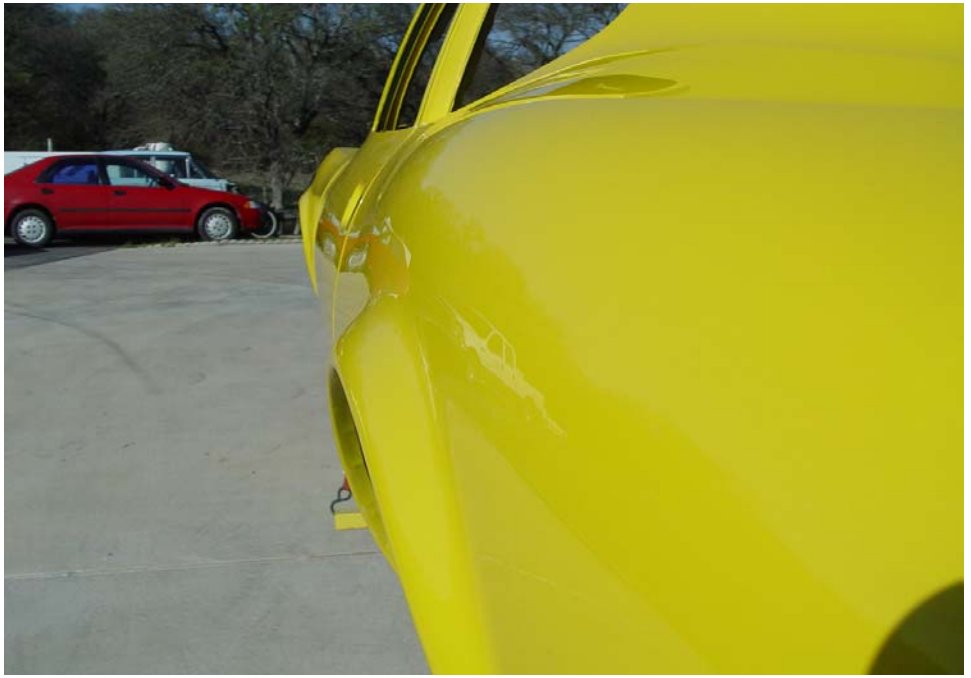









Midlife Classics



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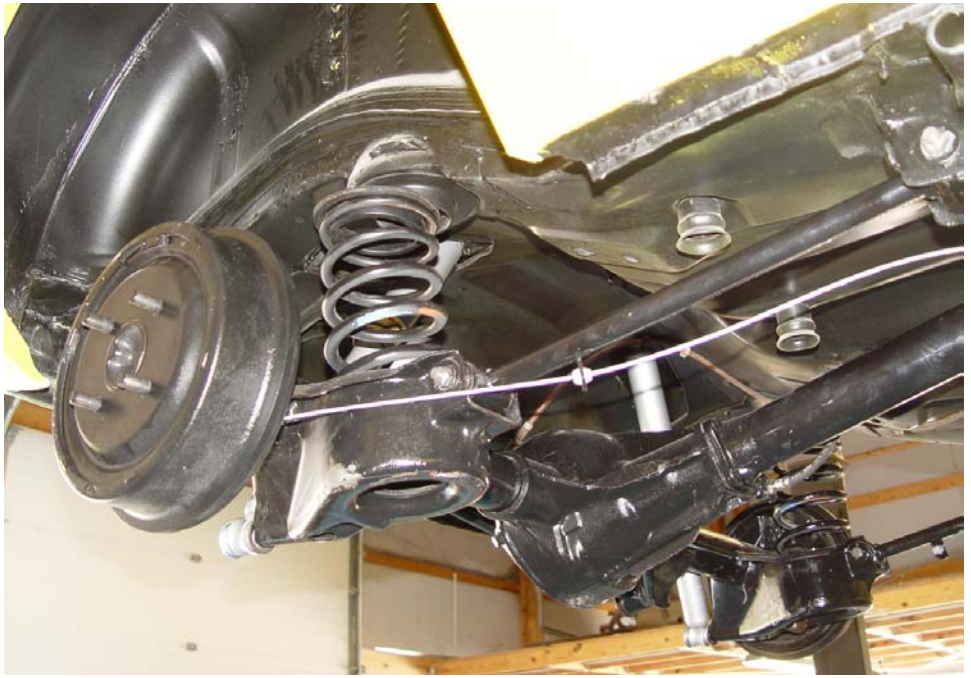
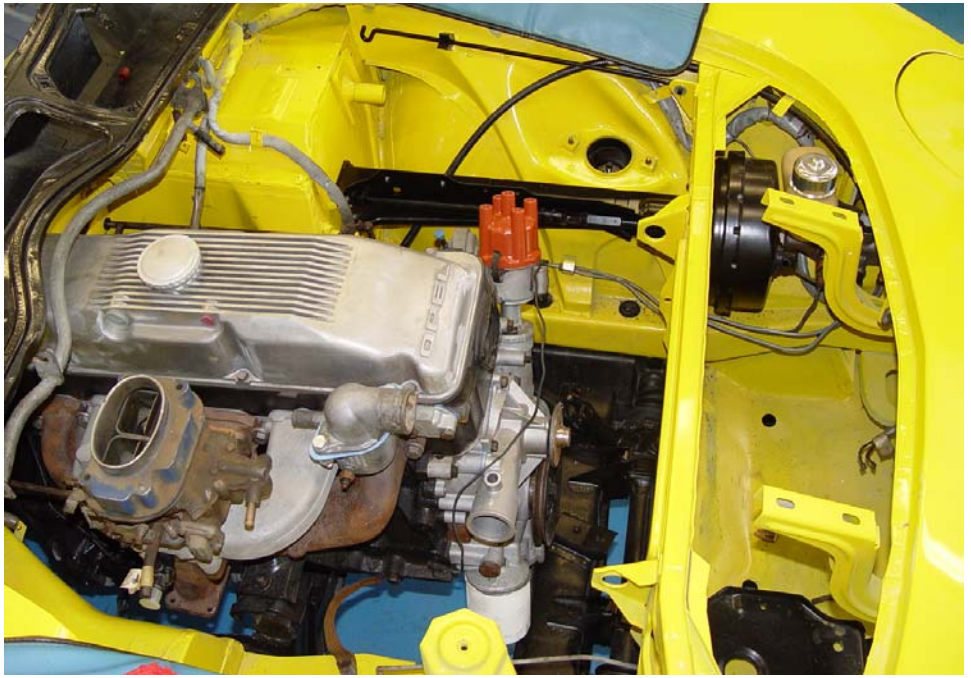
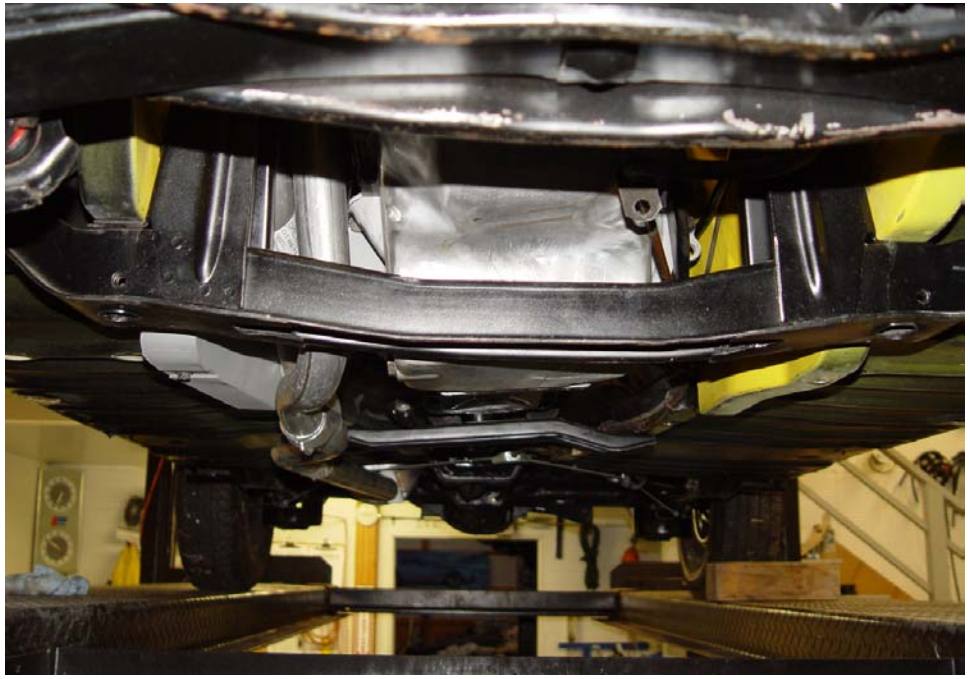
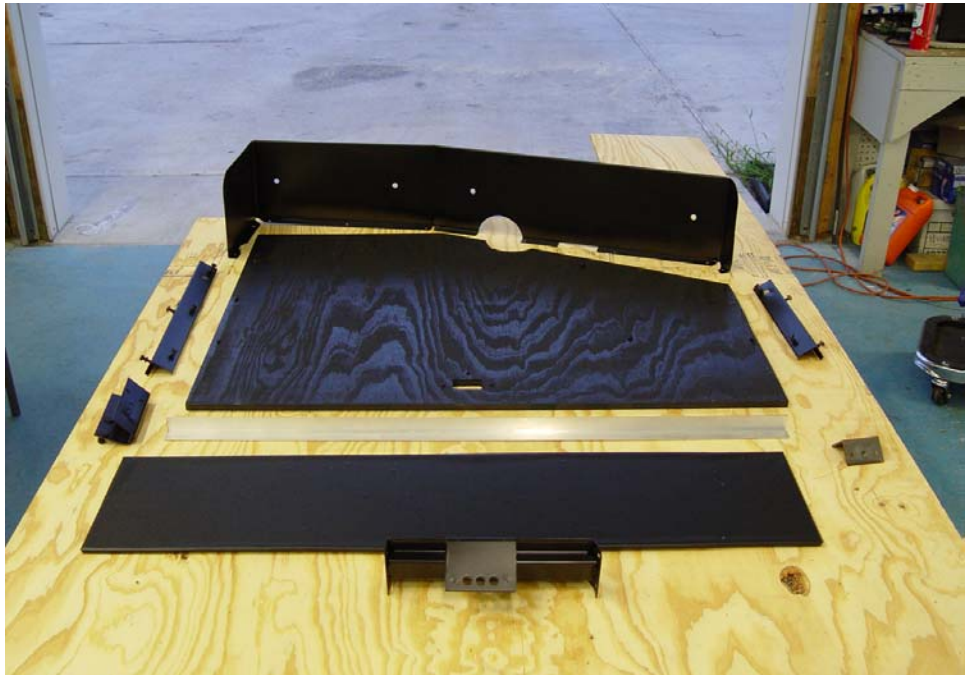
PHASE III - Reassembly & Testing










PASS


DRIVER


COUNTY TRASH
903-583-3610


COUNTY TRASH
903-583-3610


CALIFORNIA
162 APQ


CALIFORNIA
162 APQ

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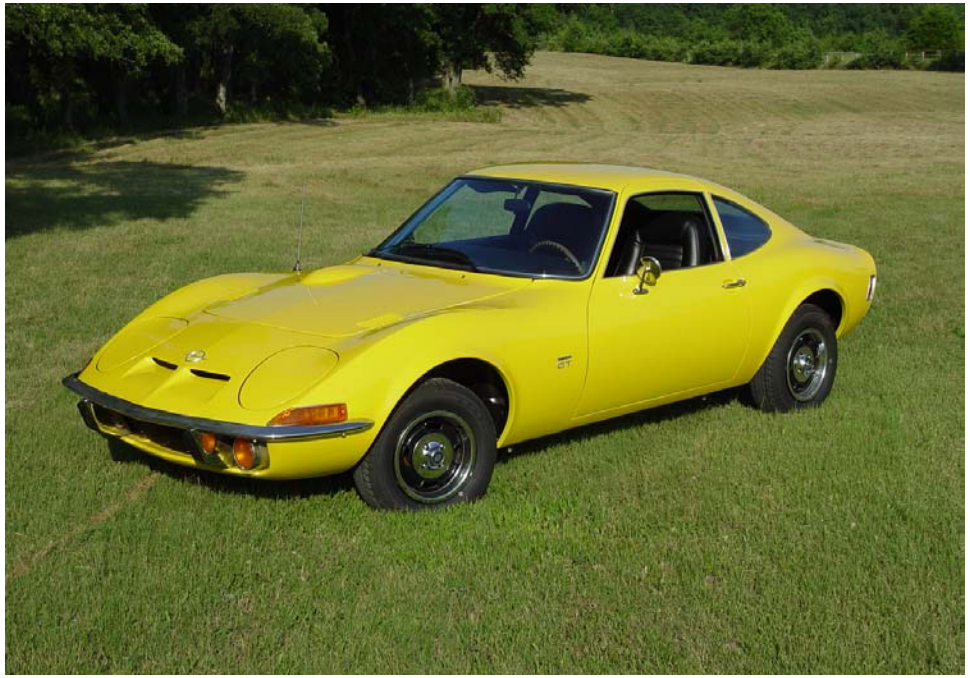
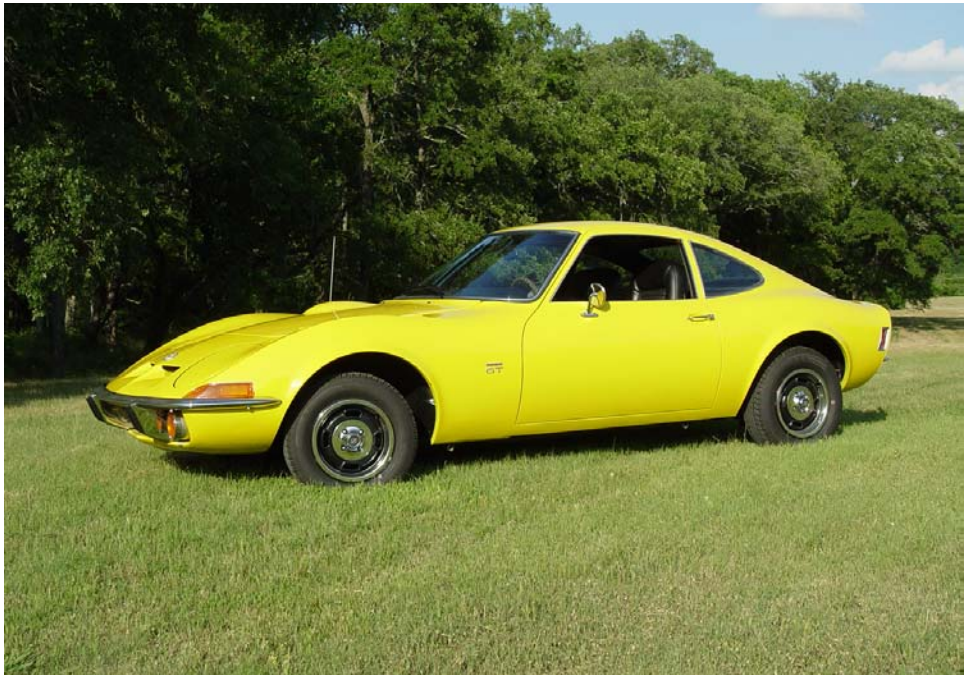
< Completed Project >

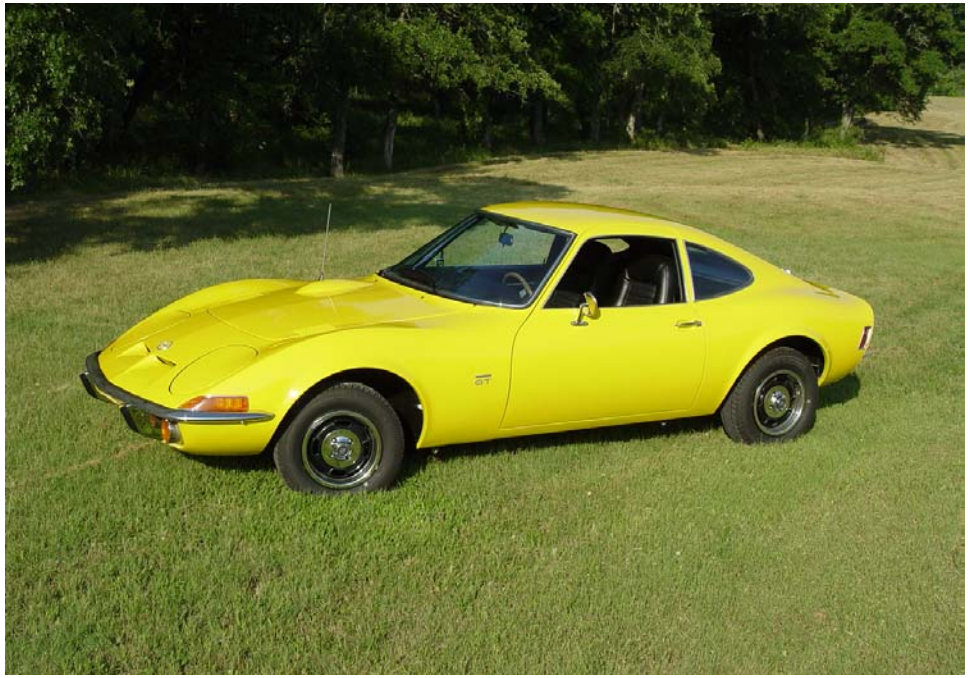

CALIFORNIA
162 APQ

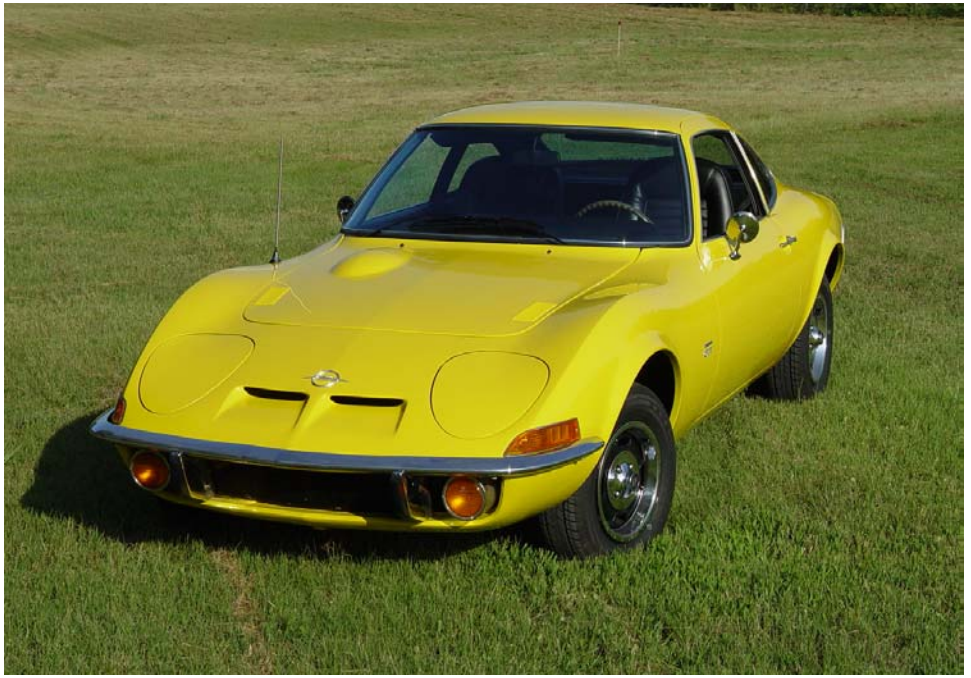

CALIFORNIA
162 APQ

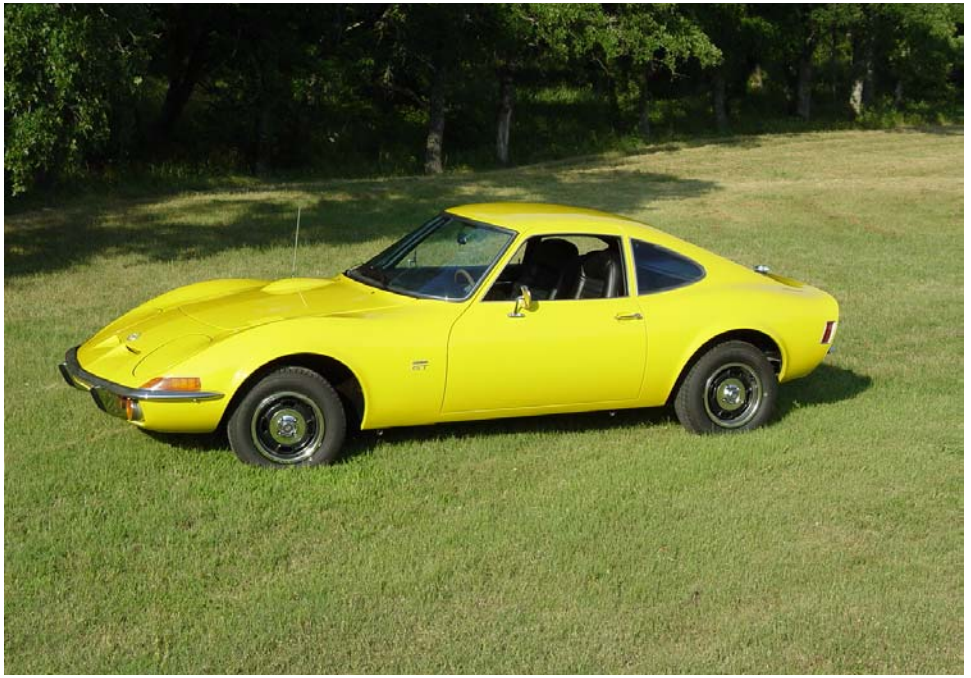

162 APQ

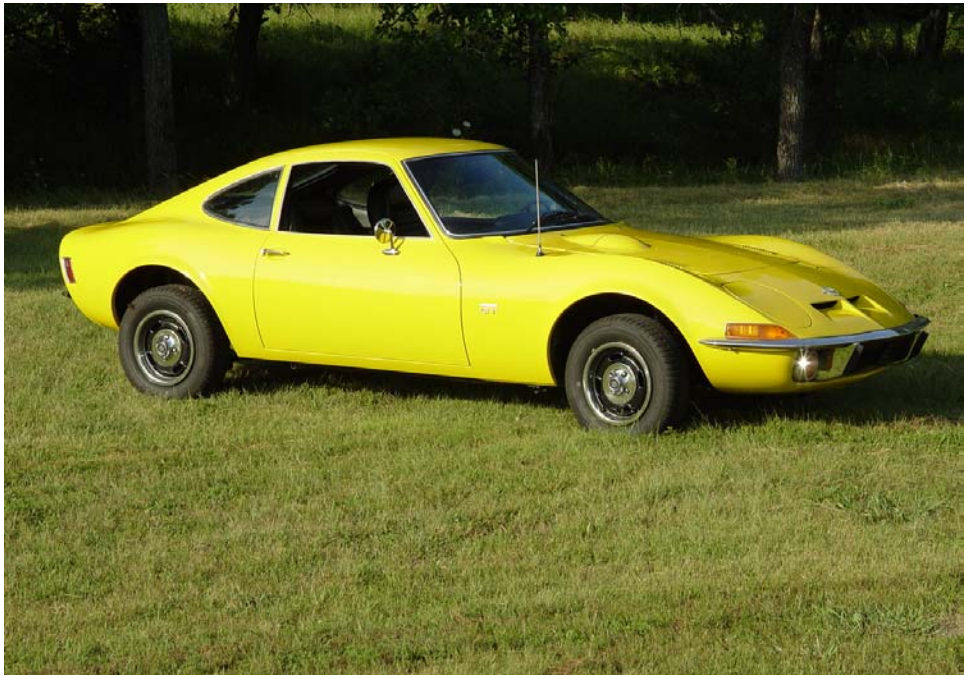










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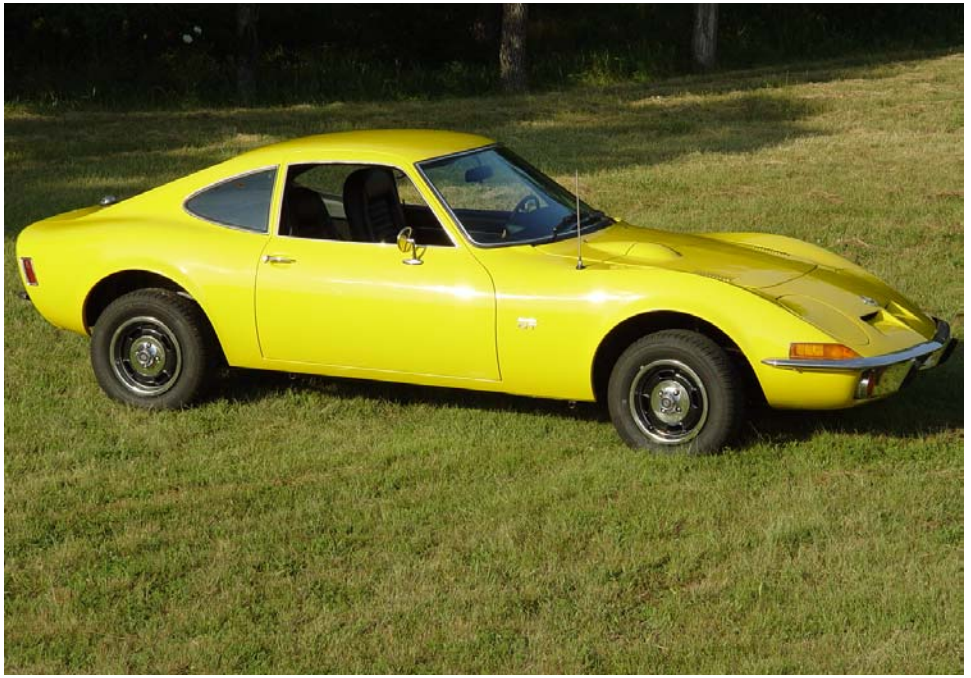
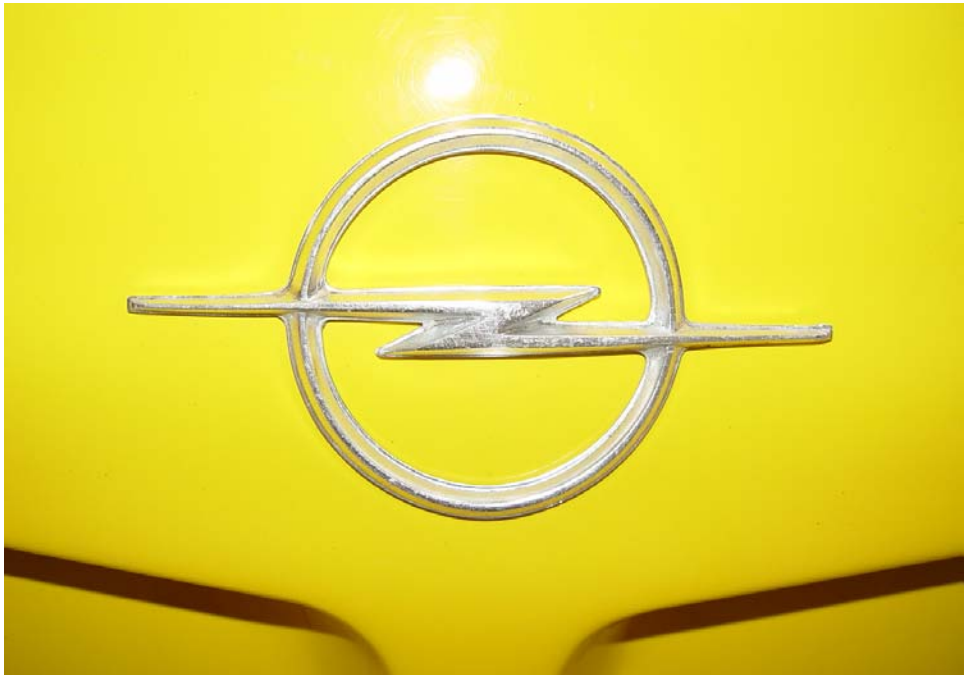
CALIFORNIA
162 APQ




OPEL
GT



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1970 GT

Project Summary

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PROJECT SUMMARY

1970 Opel GT

for

Vincent Kitts

This was a total "frame off" restoration project of Vincent Kitts' 1970 Opel GT. The project was contracted with Midlife Classics on June 22nd 2008 and completed on June 28th, 2010. Delivery to Mr. Kitts will take place via international shipping to France. Upon completion, the vehicle's odometer reading was 9917.8 miles.

OBJECTIVE: Mr. Kitts' desire was to restore the car to be capable of providing service as a safe and reliable "occasional driver" with a desire to retain as much of the car's original patina as possible.

SCOPE: This was a complete bare-metal rotisserie restoration. Every component/system of the car was disassembled except for the drivetrain (engine, transmission and rear axle). At the beginning of the project, the engine was demonstrated as being capable of starting and running well enough to "yard drive" the car. With that in mind, the client opted to not put any effort into rebuilding the drivetrain components beyond what was needed to make it driveable.

The entire chassis was sodablasted inside and out. The undercarriage and engine compartment were finished with POR15 "Chassis Black" paint for maximum durability and rust protection.

Due to the fact that the paint and interior were beyond salavaging, cosmetically, the car was refurbished to as close to "like-new" condition as possible. Prior to painting, the body was repaired as needed with flaws reduced to a quality standard equal to or better than from the factory. A two-stage basecoat/clearcoat urethane paint (PPG's "Omni" system) was applied, then colorsanded and buffed. The interior was refurbished using an aftermarket carpet, headliner, package tray and seat covers. A dash pad cover was installed to hide cracks in the dash. Used replacement interior door panels were acquired and refurbished with new structural backing. The rear interior panels were fabricated from scratch. All remaining interior parts were refinished as appropriate.

Virtually every metal part on the car that was not replaced was stripped of all dirt, grease, paint and rust, and then refinished as appropriate.

UPGRADES: The following items/systems were upgraded or modernized to fit the stated project objective.

- **Suspension & Wheels:** All suspension bushings were replaced with urethane components.
- **Cooling System:** The radiator was re-cored with a 3-row core (vs. original 2-row core) for enhanced cooling capacity.
- **Ignition System:** The points and condenser were replaced with a Pertronix "Ignitor" electronic ignition.
- **Fuel System:** The engine retains the standard two-barrel carbureted induction system. However, the carburetor has been replaced with a Weber 32/36 DGV unit with manual choke.

MAJOR SYSTEMS & COMPONENTS: The following listing specifies the actions taken or items used to complete the major systems and components:

- **Body & Chassis:** The complete unibody chassis and all bolt-on body components were sodablasted to bare metal. The underbody was refinished using POR15 Chassis Black rust-inhibitive paint. The outer body was finished in the original factory yellow using a two-stage (basecoat/clearcoat) urethane paint. The final finish was colorsanded and buffed for best gloss.
- **Suspension:** The front suspension was rebuilt using all new components except for springs and control arms. The rear suspension received new bushings all around, but retained the original coil springs. All four shock absorbers were replaced KYB gas-filled units
- **Steering:** The original rack & pinion steering was good condition and required no work beyond replacing the dust boots on the steering rack and tie rod ends.
- **Brakes:** The brake master cylinder was replaced with a rebuilt unit. Front disc rotors were machined. The front calipers were replaced with rebuilt units. The rear brake shoes and parking brake cable were replaced with new. The rear brake drums were machined. All rubber hoses were replaced with new.
- **Power Train:** The car's power train remains pretty much as-received with the exceptions noted below:
    - Engine: The 1900 cc inline 4-cylinder engine that was in the car was not rebuilt. Front and rear seals were replaced. The engine was cleaned and repainted. A casting crack was found on the left side of the block – obscured by the starter. It was stop-drilled at each end and then filled. The original Solex carburetor was replaced with a rebuilt Weber 32/36 DGV with manual choke. The ignition system retains the original distributor, but it has been upgraded with a Pertronix "Ignitor" electronic ignition system.

- Transmission: The original 4-speed transmission remains and was not rebuilt. Front and rear seals were replaced as was the speedometer drive gear seal.
- Rear Axle: The differential was cleaned, but remains otherwise untouched. The pinion was replaced.
- Cooling System: The radiator was re-cored with a 3-row core (original was 2 rows). The water pump was replaced with new. A new 160 degree thermostat was installed.

- **Interior:** The interior was refurbished using new components for the seat upholstery, carpet, headliner and package tray. New side panels were fabricated for the front kick panels and rear wheel well covers. The door panels are used items with new backings. The car retains the original dash pad with an aftermarket ABS cover. The remaining interior components were stripped and refinished as appropriate.
- **Body Seals / Weatherizing:** All rubber seals, plugs, gaskets and weatherstripping were replaced with new reproduction replacements.

FINAL PRODUCT: The final product of the restoration is a good running and driving car. Cosmetically it is in excellent condition. The overall impression is that the car is very solid and free of all the wear and age related symptoms you would expect of a car of this vintage.

MIDLIFE CLASSICS COMMITMENT: At Midlife Classics, once we've restored a car, we are committed to seeing that the car and owner enjoy a long and pleasure-filled relationship. We are committed to helping the owner keep the car in top condition throughout its life and welcome every opportunity to perform maintenance and repairs when necessary. If, at any time, there is a question about the operation or condition of any part of the car, we are here to answer any questions and provide whatever assistance is necessary. All parts used in the restoration are covered by the manufacturers' warranties. Furthermore, Midlife Classics warrantees its workmanship for a period of 12 months or 12,000 miles (whichever comes first). This includes any labor related to the replacement of any failed parts covered by manufacturers' warranties during this 12-month/12,000 mile period. Subcontracted services are covered by the subcontracted companies for a period not to exceed Midlife Classics' 12 month / 12,000 mile coverage – with the exception of the remanufactured long-block engine which carries a 7-year / 100,000 mile warranty. Any and all warrantee services are to be performed by Midlife Classics and/or its subcontractors. With this particular car, it must be noted here that *the engine, transmission and rear axle are not covered by any warranty whatsoever*.

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1970 GT

Project Worksheets

Vincent Kitts

1970 Opel GT

"Survivor" Restoration

PROJECT SUMMARY

CHARGES

SHOP LABOR (by job)		
	PHASE I	
	PHASE II	
	PHASE III	
	JOB 4	
	JOB 5	
	SUBLET	
	TOTAL:	
PARTS		
MILEAGE		
SHIPPING		
SALES TAX		
	TOTAL:	

PAYMENTS RECEIVED

	Initial Deposit	
CASH 07/21/08	Phase I Completion & Parts	
11/03/08	CK #17 - Parts + Paint	
06/23/09	CK #?? End of Phase II	
09/29/09	Ck #??	
02/22/10	CK #??	
04/03/10	CK #??	
	TOTAL:	

CREDITS ISSUED

	TOTAL:	**$ -**

BALANCE DUE

LABOR
Vincent Kitts
1970 Opel GT

LABOR RATE:												
	HOURS						JOB APPLIED TO					
DESCRIPTION	BOB	GLENN	ANDY	TOTAL	PRICE	J	PHASE I	PHASE II	PHASE III	JOB 4	JOB 5	SUBLET
Disassembly - Roll In & Setup Bins	0.25		0.50	0.75	$30.00	1	$ 30.00					
Disassembly - Pull Int, Fr & Rr Glass	0.25		4.00	4.25	$170.00	1	$ 170.00					
Disassembly - Side Glass, Lights etc.	0.50		3.50	4.00	$160.00	1	$ 160.00					
Disassembly - Bumpers, Lights etc.	1.00		5.50	6.50	$260.00	1	$ 260.00					
Disassembly - Rear Suspension	0.25		3.00	3.25	$130.00	1	$ 130.00					
Disassemble - Rear Susp & Exhaust	1.50		4.25	5.75	$230.00	1	$ 230.00					
Disassemble - Manifolds, Radiator Strng	0.50		4.50	5.00	$200.00	1	$ 200.00					
Remove Front Susp, Engine, Trans.	4.00		4.50	8.50	$340.00	1	$ 340.00					
Remove Misc. Eng. Bay & Body Items	0.15		2.00	2.15	$86.00	1	$ 86.00					
Remove Misc. Eng. Bay & Body Items	0.15		4.25	4.40	$176.00	1	$ 176.00					
Remove Misc. Eng. Bay & Body Items	1.00		2.75	3.75	$150.00	1	$ 150.00					
Mount Body on Cart	0.75		0.75	1.50	$60.00	1	$ 60.00					
Prep Wiring Harness & Vacuum Chassis			3.00	3.00	$120.00	1	$ 120.00					
Pressure Wash Body/Chassis			4.00	4.00	$160.00	1	$ 160.00					
Pressure Wash Chassis, Scrape Interior	3.50		1.50	5.00	$200.00	1	$ 200.00					
Chemically Strip & Pressure Wash Body	4.00		5.00	9.00	$360.00	1	$ 360.00					
Chemically Strip & Pressure Wash Body			4.50	4.50	$180.00	1	$ 180.00					
Power Sand Body	0.50			0.50	$20.00	1	$ 20.00					
Power Sand Body			4.00	4.00	$160.00	1	$ 160.00					
Power Sand Body			3.00	3.00	$120.00	1	$ 120.00					
Power Sand Body			4.50	4.50	$180.00	1	$ 180.00					
Remove Rear Trim	0.50			0.50	$20.00	1	$ 20.00					
Media Blast Body			3.50	3.50	$140.00	1	$ 140.00					
Separate Eng/Trans & Clean Trans	1.00		4.00	5.00	$200.00	2		$ 200.00				
Clean Susp Parts & Blast Body			6.00	6.00	$240.00	2		$ 240.00				
Sodablast Body	12.00		1.50	13.50	$540.00	1	$ 540.00					
Misc			5.00	5.00	$200.00	1	$ 200.00					
Bodywork		8.75	16.00	24.75	$990.00	1	$ 990.00					
Bodywork		46.50		46.50	$1,860.00	1	$ 1,860.00					
Suspension Clean & Finish			22.50	22.50	$900.00	1	$ 900.00					
Bodywork & Prime	3.00	85.50		88.50	$3,540.00	1	$ 3,540.00					
Bodywork & Prime		38.50		38.50	$1,540.00	2		$ 1,540.00				
POR15 floorboards & under chassis		8.00		8.00	$320.00	2		$ 320.00				
Sand out Orange Peel in Primer		5.00		5.00	$200.00	2		$ 200.00				
Finish Wetsand		5.00		5.00	$200.00	2		$ 200.00				
Prime Hood, sand rear molding & door edges		4.00		4.00	$160.00	2		$ 160.00				
Load and transport to paint shop		1.50		1.50	$60.00	2		$ 60.00				
Swap out master cyl & booster parts		3.00		3.00	$120.00	2		$ 120.00				
Sodablaster Rental				0.00	$250.00	O						$ 250.00
Clean Brake Booster & Paint		1.00		1.00	$40.00	2		$ 40.00				
Paint Body		50.00		50.00	$2,000.00	O						$ 2,000.00
Turn Brake Drums & Rotors				0.00	$60.00	O						$ 60.00
Resurface Flywheel				0.00	$50.00	O						$ 50.00
Clean & Rebuild Front Suspension		19.00		19.00	$760.00	2		$ 760.00				
Rebuild Front Brakes		2.50		2.50	$100.00	2		$ 100.00				
Rebuild Rear Brakes		3.00		3.00	$120.00	2		$ 120.00				
Clean & Rebuild Rear Axle/Torque Tube		9.50		9.50	$380.00	2		$ 380.00				
Repair Engine Block Crack		6.00		6.00	$240.00	2		$ 240.00				
Touch-Up Engine Paint		2.00		2.00	$80.00	2		$ 80.00				
Repair Thermostat Housing & Install T-Stat		4.50		4.50	$180.00	2		$ 180.00				
Replace Water Pump & Fuel Pump		1.00		1.00	$40.00	2		$ 40.00				
Clean, Inspect, Reseal Transmission		5.50		5.50	$220.00	2		$ 220.00				
Misc Gathering & Organizing of Parts		1.00		1.00	$40.00	2		$ 40.00				
Front end alignment				0.00	$50.00	O						$ 50.00
				0.00								
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				0.00								
				0.00								
				0.00								
				0.00								
TOTAL:	34.80	310.75	127.50	473.05								

PARTS LISTING

Vincent Kitts

1970 Opel GT

QTY	DESCRIPTION	ITEM NO.	VENDOR	PRICE	SHIP	TOTAL
1.00	Aircraft Paint Remover	PPG DX586G	Big G	$70.85		$70.85
1.00	Steering Column Trim		eBay	$12.49	$6.30	$18.79
12.00	Sodablasting Media - 50 lb bag		Stripco	$31.88		$382.56
36.72	Diesel Fuel - Sodablaster		Allsups	$4.00		$146.88
1.00	Engine Enamel Paint		Autozone	$6.86		$6.86
1.00	Fan Shroud		eBay	$46.25	$10.25	$56.50
1.00	Wheel Well Cover (passenger)		eBay	$12.49	$13.95	$26.44
1.00	W/S Washer Tank		eBay	$19.38	$9.45	$28.83
1.00	Vents & Heater Control Face Plate		eBay	$45.00	$10.42	$55.42
1.00	LUK Clutch Kit		eBay	$164.00	$17.71	$181.71
1.00	Pertronix Electronic Ignition		Summit	$99.95	$11.75	$111.70
1.50	DPX171 Etching Primer			$48.50		$72.75
1.50	DPX172 Etching Catalyst			$36.00		$54.00
2.50	K38 Build Primer			$197.25		$493.13
2.00	K201 Build Reducer			$80.56		$161.12
4.00	DT885 Reducer			$21.32		$85.28
1.00	NCS2004 Sealing Primer			$187.00		$187.00
1.00	NCX2200 Sealer Catalyst			$62.25		$62.25
1.00	Metal Cleaner			$25.50		$25.50
2.00	Gun Conditioner			$10.26		$20.52
1.00	Guide Coat - Black			$7.15		$7.15
1.25	Z-Grip Body Filler			$25.81		$32.26
1.00	Metal Glaze Body Filler			$32.24		$32.24
3.00	Gunk Engine Cleaner			$4.84		$14.52
1.50	POR15 Chassis Coat (undercoat paint)			$55.00		$82.50
1.00	Urethane Clear Paint	MC161	English Color	$70.31		$70.31
2.00	Fast Hardener	MH167	English Color	$45.31		$90.62
1.00	Med. Reducer	MR186	English Color	$37.78		$37.78
1.00	Urethane Basecoat - 407	MBCAMIX	English Color	$149.66		$149.66
1.00	Headliner		Opel GT Source	$136.25		$136.25
1.00	Metal Inner control arm sleeves		Opel GT Source	$61.50	$6.60	$68.10
1.00	Emergency Brake Cable		Opel GT Source	$82.50		$82.50
1.00	Brake Master Cylinder Cap		Opel GT Source	$52.50		$52.50
1.00	Brake Master Cylinder Reservoir	USED	Opel GT Source	$36.25		$36.25
1.00	Transmission Rear Seal	8009	Opel GT Source	$15.00		$15.00
1.00	Speedo Drive Inner Cup Seal		Opel GT Source	$5.63		$5.63
1.00	Door Window Track Set	2005	Opel GT Source	$144.00		$144.00
1.00	Rear Package Tray w/Speaker Hole		Opel GT Source	$61.25		$61.25
1.00	Door Weatherstripping	2222	Opel GT Source	$98.75		$98.75
1.00	Hood Prod Holder		Opel GT Source	$4.38		$4.38
1.00	Under Hood Rubber Set		Opel GT Source	$31.25		$31.25
1.00	Hood Rubber Bumper		Opel GT Source	$4.38		$4.38
1.00	Gasket, Heater Box Tubes to Chassis		Opel GT Source	$11.25		$11.25
1.00	Fuel Filler Neck Gasket		Opel GT Source	$17.50		$17.50
2.00	Chrome Window Trim Corners		Opel GT Source	$7.50		$15.00
1.00	Window Washer Tubing		Opel GT Source	$7.50		$7.50
4.00	Visor Hinge		Opel GT Source	$5.00		$20.00
1.00	Shifter Boot		Opel GT Source	$40.50		$40.50
2.00	Brake/Clutch Rubber Pad		Opel GT Source	$6.50		$13.00
1.00	Accelerator Pedal Rubber pad		Opel GT Source	$9.00		$9.00
1.00	R/L Side Markers (pair)		Opel GT Source	$125.00		$125.00
1.00	Window Channel Front		Opel GT Source	$136.25		$136.25
1.00	Window Channel Rear		Opel GT Source	$131.25		$131.25
2.00	Window Channel Side 1/4 Windows		Opel GT Source	$86.25		$172.50
2.00	Lower Door Window Rubber Scraper		Opel GT Source	$31.50		$63.00
1.00	Chrome Insert - Window Channel		Opel GT Source	$73.75		$73.75
2.00	Upper Door Bumper		Opel GT Source	$4.38		$8.76
1.00	Door Handle Gaskets - Set		Opel GT Source	$14.25		$14.25
1.00	Front Brake Pads		Opel GT Source	$36.25		$36.25
1.00	Rear Brake Shoes	4011	Opel GT Source	$45.00		$45.00
3.00	Brake Hose	4021	Opel GT Source	$25.00		$75.00
2.00	Rear Wheel Cylinder		Opel GT Source	$56.25		$112.50
2.00	Brake Caliper		Opel GT Source	$123.75		$247.50
1.00	Brake Master Cylinder (rebuilt)		Opel GT Source	$148.75		$148.75
1.00	Brake Booster Hose		Opel GT Source	$26.25		$26.25
1.00	Rear Brake Hardware		Opel GT Source	$22.50		$22.50
1.00	Seals - Mstr Cylinder to Reservoir		Opel GT Source	$15.00		$15.00
1.00	Seal - Vacuum Booster Inlet		Opel GT Source	$2.50		$2.50
1.00	Filter - Vacuum Booster Inlet		Opel GT Source	$2.50		$2.50
1.00	Water Pump		Opel GT Source	$73.75		$73.75
1.00	Fuel Pump		Opel GT Source	$57.50		$57.50
1.00	Throttle Grommet - Pass Side		Opel GT Source	$4.38		$4.38
1.00	Throttle Grommet - Driver Side		Opel GT Source	$5.63		$5.63
2.00	Accelerator Linkage Lock Spring		Opel GT Source	$3.13		$6.26
1.00	Transmission Mount		Opel GT Source	$47.50		$47.50
1.00	Driveshaft Donut		Opel GT Source	$49.50		$49.50
1.00	Rear Axle Pan Gasket		Opel GT Source	$10.00		$10.00
1.00	Speedo Drive O-Ring		Opel GT Source	$2.50		$2.50
2.00	Torque Tube Support Bushing		Opel GT Source	$42.00		$84.00
1.00	Torque Tube Upper Stop		Opel GT Source	$4.38		$4.38
1.00	Shifter Return Spring		Opel GT Source	$4.50		$4.50
1.00	Shifter Lower Shaft Spring		Opel GT Source	$9.75		$9.75
4.00	Spark Plugs		Opel GT Source	$2.50		$10.00
1.00	Ignition Wire Set		Opel GT Source	$25.00		$25.00
1.00	Distributor Cap and Rotor		Opel GT Source	$23.75		$23.75
2.00	Motor Mount		Opel GT Source	$36.25		$72.50
1.00	Carburetor Gasket		Opel GT Source	$11.25		$11.25
1.00	Carburetor Heat Shield Gasket		Opel GT Source	$5.00		$5.00
2.00	Gasket, Fuel Pump	6017	Opel GT Source	$1.50		$3.00
1.00	Carburetor Rebuild Kit (Solex)		Opel GT Source	$48.75		$48.75
1.00	Air Filter		Opel GT Source	$31.25		$31.25
1.00	Thermostat Gasket		Opel GT Source	$1.88		$1.88
1.00	Thermostat		Opel GT Source	$12.50		$12.50
1.00	Upper Radiator Hose		Opel GT Source	$23.75		$23.75
1.00	Lower Radiator Hose		Opel GT Source	$23.75		$23.75
1.00	90 Degree heater Hose		Opel GT Source	$20.00		$20.00

PARTS LISTING

Vincent Kitts

1970 Opel GT

1.00	Rear Axle Pinion Seal	7018	Opel GT Source	$15.00		$15.00
1.00	Engine Rear Seal	6019	Opel GT Source	$30.00		$30.00
1.00	Intake/Exhaust Gasket	6006	Opel GT Source	$16.25		$16.25
1.00	Transmission Front Seal	8008	Opel GT Source	$31.50		$31.50
1.00	Transmission Front Gasket	8011	Opel GT Source	$3.13		$3.13
1.00	Transmission Pan Gasket	8012	Opel GT Source	$9.00	$12.00	$21.00
5.00	Semi-Gloss Black Engine Paint		Autozone	$6.65		$33.25
1.00	J-B Weld		Big G	$11.52		$11.52
1.00	Freeze Plug		Autozone	$1.20		$1.20
2.00	Brake Cleaner - Can		Big G	$6.19		$12.38
1.00	Mirror -Left	2035L	Opel GT Source	$86.25		$86.25
1.00	Mirror - Right	2035R	Opel GT Source	$86.25		$86.25
1.00	Front Wheel Hub	Used	Opel GT Source	$39.00	$24.00	$63.00
1.00	Wheel Lug Stud	7020	Opel GT Source	$9.75		$9.75
1.00	Steering Shaft Seal	3058	Opel GT Source	$11.25		$11.25
4.00	Front Hub-to-Rotor Bolt	4061	Opel GT Source	$3.75	$6.60	$21.60
1.00	Exhaust Flange Gasket	10009	Opel GT Source	$6.25	$12.00	$18.25
1.00	Carpet Kit - Loop		Opel GT Source	$135.00	$16.00	$151.00
2.00	Trim Strip - Rear Arch Interiro	2052		$3.75		$7.50
1.00	Rear Arch Upholstery	1038		$25.00		$25.00
1.00	ABS Dash Pad Cover	1023		$130.00		$130.00
1.00	Heater Control Plate	11030		$120.00		$120.00
1.00	Exhaust Head Pipe	10004		$149.00		$149.00
1.00	Exhaust Front Muffler	10005		$149.00		$149.00
1.00	Exhaust Connector Pipe	10006		$16.50		$16.50
1.00	Exhaust Resonator	10007		$149.00		$149.00
1.00	Resonator Bump Stop Bushing	10017		$6.00		$6.00
2.00	Muffler Hangars - Front	10008		$3.50		$7.00
2.00	Muffler Donuts - Resonator	10010		$3.60		$7.20
1.00	Bolts - Head Pipe to Exh. Manofold	10011		$3.00	$60.00	$63.00
4.00	Ball Nut Lock Springs (90 degree)	Throttle Linkange Clips		$2.50		$10.00
2.00	Ball Nut Lock Springs (0 degree)	Throttle Linkange Clips		$3.13		$6.26
1.00	Radio Antenna	MISAW-UT10	Big G	$9.95		$9.95
2.00	Vinyl - Sq Yd			$4.99		$9.98
6.00	Foam Padding - 1/4" - Sq Ft			$2.50		$15.00
1.00	Fiberboard - Sheet			$16.00		$16.00
8.00	Floor Pan Rubber Plugs			$1.25		$10.00
1.00	AM Radio		eBay	$27.08	$18.00	$45.08
1.00	Heater Control Valve		eBay	$49.78	$8.05	$57.83
1.00	Solex Carburetor		eBay	$49.92	$29.95	$79.87
1.00	Battery Box			$98.75		$98.75
1.00	Alternator Belt	GAT7360	Big G	$12.00		$12.00
1.00	Dome Light Base	used	Opel GT Source	$15.00		$15.00
2.00	Headliner Bow Clips	Used	Opel GT Source	$6.25		$12.50
2.00	Window Track Clips (set of 20)	2036	Opel GT Source	$18.80	$6.60	$44.20
1.00	Driver's Side Wheel Well Cover	Used	eBay	$12.49	$13.95	$26.44
7.00	Fuses (8A - European)			$1.00		$7.00
1.00	Window Frame Corner		Opel GT Source	$12.50		$12.50
3.00	Fixed Qtr Window Chrome Corner	Used	Opel GT Source	$7.50		$22.50
1.00	Heater Core Pipe Set	Used	Opel GT Source	$45.00		$45.00
1.00	Driver's Side Inner Door Panel	Used	Opel GT Source	$45.00		$45.00
2.00	Lower Door Weatherstripping		Opel GT Source	$11.25		$22.50
2.00	Door Panel Clips (10-pak)		Opel GT Source	$12.50	$35.00	$60.00
1.00	Battery	CNT58R-60	Big G	$85.00		$85.00
1.00	Radiator Recore			$290.00		$290.00
4.00	Tires 175/70 x 13			$81.25		$325.00
1.00	Vinyl Spray Dye (black)		Autozone	$9.95		$9.95
1.00	Defroster Hose	MTM96004	Big G	$5.34		$5.34
2.00	Windshield Wiper Blades	VCB16	Autozone	$8.32		$16.64
1.00	Window Bottom Trim Brightwork	used	mikestoys.polett	$27.60		$27.60
13.00	Electrical Spade Connector		Inventory	$0.50		$6.50
2.00	Electrical Bullet Connector		Inventory	$0.50		$1.00
4.00	Electrical Loop Connector		Inventory	$0.50		$2.00
3.00	Clear Overflow Tubing (per ft.)		Inventory	$0.75		$2.25
3.00	5/8" Heater Hose (per ft.)		Inventory	$1.50		$4.50
3.00	5/16 Fuel/Heater Hose (per ft.)		Inventory	$1.00		$3.00
2.00	Hose Clamp (large)		Inventory	$1.75		$3.50
5.00	Hose Clamp (medium)		Inventory	$1.25		$6.25
6.00	Hose Clamp (small)		Inventory	$0.75		$4.50
1.00	Battery Terminal (pos)		Inventory	$3.82		$3.82
1.00	Oil Filter		Inventory	$9.95		$9.95
4.00	Oil Rotella T - Qts.		Inventory	$5.62		$22.48
1.00	Battery Hold-Down Clamp		Big G	$4.95		$4.95
1.00	Brake Fluid		Autozone	$11.65		$11.65
1.00	Battery Cable - Ground		Autozone	$6.99		$6.99
1.00	Antifreeze - Gallon		Autozone	$16.24		$16.24
1.00	Gear Oil		Autozone	$16.24		$16.24
1.00	Fuel Filter		Big G	$8.85		$8.85
1.00	Center Console - Front Section		eBay	$71.65	$15.00	$86.65
1.00	Alternator		Opel GT Source	$165.00	$14.50	$179.50
1.00	Oil Pressure Sending Unit		Opel GT Source	$75.00		$75.00
1.00	Speedometer (used)		Opel GT Source	$60.00	$16.00	$76.00
1.00	Carburetor Rebuild Kit (Weber)			$41.67		$41.67
1.00	Universal Choke Conversion Kit			$19.98		$19.98
2.00	Firewall Grommets			$0.49		$0.98
1.00	Momentary Switch (starter)			$5.98		$5.98
10.00	Premium Gasoline		Alsups	$3.50		$35.00
1.00	Voltage Regulator		Autozone	$37.49		$37.49
1.00	Weber Jet Tuning Kit		eBay	$20.63	$11.00	$31.63
1.00	Amp/Oil Gauge (used)		Opel GT Source	$37.50		$37.50
8.00	Seat Bolts		Inventory	$0.69		$5.52
1.00	Suspension Control Arm Bushing Kit	3026	Opel GT Source	$50.00		$50.00
1.00	Suspension Grease	3061	Opel GT Source	$2.00		$2.00
1.00	Suspension Ball Joint Boot Kit	3333	Opel GT Source	$33.00		$33.00
1.00	Steering Rack Boot Kit	3064	Opel GT Source	$33.50		$33.50
2.00	KYB Gas Shock - Front	3054	Opel GT Source	$46.00		$92.00
1.00	KYB Shock Shim Kit	KIT104	Opel GT Source	$19.95		$19.95

PARTS LISTING

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1970 Opel GT

2.00	KYB Gas Shock- Rear	3055	Opel GT Source	$39.00		$78.00
1.00	Pinion Shaft Dust Boot Seal	3057	Opel GT Source	$9.00		$9.00
2.00	Spray Adhesive	1016	Opel GT Source	$10.00		$20.00
1.00	Seat Upholstery Kit - Black Vinyl	1010	Opel GT Source	$379.00		$379.00
2.00	Carpet Padding	1017	Opel GT Source	$11.00		$22.00
1.00	Parking Brake Boot - Black	1013	Opel GT Source	$20.00		$20.00
1.00	Door Chrome Corner	Used	Opel GT Source	$13.00		$13.00
1.00	Seal - Master Cylinder to Booster	4030	Opel GT Source	$3.00		$3.00
			TOTAL:			

PARTS LISTING

Vincent Kitts

1970 Opel GT

Midlife Classics

Classic Auto Restoration, Upgrades, Service & Sales

Princeton, TX
972-736-3560
www.midlifeclassics.com

1970 GT

Project Checklists

CHECKLISTS
Vincent Kitts
1970 Opel GT

SYSTEM	ITEM	TEST	PASS	FAIL	BY	NOTES
SUSPENSION & STEERING						
	Ball Joints	Check Bolts Tight & Lubed	**X**		**RC**	
	Tie Rod Ends	Check Tight & Lubed	**X**		**RC**	
	Control Arm Pivots	Check Tight & Lubed	**X**		**RC**	
	Steering Rack/Box	Check All Tight & Lubed	**X**		**RC**	
	Axle Bearings & Nuts	Check Adj & Grease. Rotates Freely	**X**		**RC**	
	Rear Springs	Check Bolts & Seats	**X**		**RC**	
	Shocks	Check Bolts Tight	**X**		**RC**	
	Steering Wheel	Check Attach & Centered	**X**		**RC**	
	Power Steering	Check Leaks, Belt, Fluid	**N/A**			
	Suspension Action	Check Range & Damping	**X**		**RC**	
	Steering Action	Check Lock-to-Lock	**X**		**RC**	
BRAKES						
	Front Pads/Shoes	Check Wear, Fittment, Adjustment	**X**		**RC**	
	Rear Pads/Shoes	Check Wear, Fittment, Adjustment	**X**		**RC**	
	Front Rotors/Drums	Check Wear & Secure	**X**		**RC**	
	Rear Rotors/Drums	Check Wear & Secure	**X**		**RC**	
	Reservoir	Check Fluid Level	**X**		**RC**	
	Booster	Check Vacuum Connections	**X**		**RC**	
	Warning System	Check Switch Connected & Centered	**X**		**RC**	
	Pedal	Check Pedal Travel & Feel	**X**		**RC**	
	Emergency/Parking	Check if Holds Vehicle & Releases	**X**		**RC**	
	Braking Action	Road Test, Check for Pull & Locking	**X**		**RC**	
COOLING SYSTEM						
	Hoses	Check for Aging, Splits & Clamps	**X**		**RC**	
	Routing	Verify Hose Routing is Correct	**X**		**RC**	
	Coolant	Check Radiator Full & Proper Mix	**X**		**RC**	
	Leaks	Inspect for Leaks	**X**		**RC**	
	Radiator Cap	Verify Cap Secure & Proper Press.	**X**		**RC**	
	Overflow	Verify Hose/Container in Place	**N/A**			
	Monitoring	Verify Any Gauges/Lights Connected	**X**		**RC**	
	Pressure Test	Inspect for Leaks	**X**		**RC**	No leaks at Temp

CHECKLISTS
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1970 Opel GT

SYSTEM	ITEM	TEST	PASS	FAIL	BY	NOTES
FLUIDS						
	Engine Oil	Check Level & Correct Fluid	X		RC	
	Transmission Fluid	Check Level & Correct Fluid	X		RC	
	Power Steering Fluid	Check Level & Correct Fluid	N/A			
	Coolant	Check Level & Correct Fluid	X		RC	
	Brake Fluid	Check Level & Correct Fluid	X		RC	
	Rear Axle Gear Oil	Check Level & Correct Fluid	X		RC	
	Windshield Washer	Check Level & Correct Fluid	X		RC	Can't reach nozzles
	Fuel	Add 5+ Gallons for Testing	X		RC	3 Gallons
ELECTRICAL SYSTEM						
	Pre-Powered Overview	Verify Connections Match Diagrams	X		RC	
	- Alternator	Verify Connections Correct	X		RC	
	- Ignition Coil	Verify Connections Correct	X		RC	Recheck Later
	- Spark Plug Wires	Verify Connections Correct	X		RC	
	- Horn(s)	Verify Connections Correct	X		RC	
	- Oil Pressure Sensor	Verify Connections Correct	X		RC	
	- Water Temp Sensor	Verify Connections Correct	X		RC	
	- Heat & A/C	Verify Connections Correct	X		RC	
	- Exterior Lighting	Verify Connections Correct	X		RC	
	- Gauge Cluster	Verify Connections Correct	X		RC	
	- Accessories	Verify Connections Correct	X		RC	
	- Fuse Box/Panel	Verify Fuses Installed & Correct	X		RC	
	CONNECT BATTERY	CHECK FOR SMOKE!	X		RC	
	KEY OFF Testing					
	- Parking Lights	Check Proper Operation	X		RC	
	- Headlights Low	Check Proper Operation	X		RC	
	- Headlights High	Check Proper Operation	X		RC	
	- Tail Lights	Check Proper Operation	X		RC	
	- Brake Lights	Check Proper Operation	X		RC	
	- Hazard Flashers	Check Proper Operation	X		RC	
	- Panel Lights	Check Proper Operation	X		RC	
	- Horn(s)	Check Proper Operation	X		RC	
	- Clock	Check Proper Operation		X	RC	
	- Interior Lighting	Check Proper Operation	X		RC	
	- Cigarette Lighter	Check Proper Operation		X	RC	

CHECKLISTS
Vincent Kitts
1970 Opel GT

SYSTEM	ITEM	TEST	PASS	FAIL	BY	NOTES
ELECTRICAL SYSTEM (Continued)						
	KEY ON Testing					
	- Check Above Items	Check Op of Any Failed Key Off Items	X		RC	
	- Turn Signals	Check Proper Operation	X		RC	
	- Backup Light(s)	Check Proper Operation	X		RC	
	- Parking Brake Warn	Check Proper Operation	N/A			
	- Charge Gauge/Light	Check Proper Operation	X		RC	
	- Temp Gauge/Light	Check Proper Operation	X		RC	
	- Oil Press Gauge/Light	Check Proper Operation	X		RC	
	- Fuel Gauge	Check Proper Operation	X		RC	
	- Windshield Wiper	Chech Proper Operation	X		RC	
	- Windshield Washer	Check Proper Operation	X		RC	
	- Heater Blower Fan	Check Proper Operation	X		RC	
	- Heater Valve (if elect.)	Check Proper Operation	N/A			
	- A/C Clutch	Check Proper Operation	N/A			
	- A/C Fan (if separate)	Check Proper Operation	N/A			
	- Radio & Access	Check Proper Operation		X	RC	
	- Ignition Power to Coil	Check Proper Operation	X		RC	
	- Electric Choke	Check Proper Operation	N/A			Manual Choke - OK
	- Starter Engage	Check Proper Operation	X		RC	**DISCONNECT COIL**
ENGINE						
	Electrical Verified	Verify Electrical Checklist Completed	X		RC	
	Fluids Verified	Verify Fluids Checklist Completed	X		RC	
	Cooling System Verifed	Verify Cooling Sys Chklst Completed	X		RC	
	Distributor Timing	Verify Static Timing - #1 TDC	X		RC	
	Accelerator Linkage	Verify Carburetor Opens/Closes	X		RC	
	Cold Start System	Verify Choke Function & Fast Idle	X		RC	
	Prime Fuel Pump	Open Fuel Line at Pump Inlet to Prime	X		RC	
	Secure For Start	Set Trans to Neutral or Park. Set Brake	X		RC	Jack stands for 1st
	Start Engine	**30-SECOND RUN LIMIT**	X		RC	**NO REVVING!**
		< CHECK OIL PRESSURE>	X		R	**STOP if Not Good**
	Check Fluids					
	- Engine Oil	Top Off as Needed	X		RC	
	- Transmission Fluid	Top Off as Needed	X		RC	
	- Power Steering Fluid	Top Off as Needed	N/A			
	- Coolant	Top Off as Needed	X		RC	

CHECKLISTS
Vincent Kitts
1970 Opel GT

SYSTEM	ITEM	TEST	PASS	FAIL	BY	NOTES
ENGINE (Continued)						
	Restart Engine					
	- Check Oil Pressure	Verify Oil Pressure Good	**N/A**			**Gauge INOP**
	- Rough Check Timing	Verify Near Timing (given fast idle)	**X**		**RC**	
	- Check Trans Fluid	Add Fluid As Needed	**N/A**			
	- Warm to Op Temp	Use Laser Temp Gauge	**X**		**RC**	
	- Verify Cooling Fan	Check Elect Cooling Fan Function	**N/A**			
	- Verify Choke Opens	Check Choke Flap and Normal Idle	**X**		**RC**	
	- Set Ignition Timing	Adjust As Per Timing Specifications	**X**		**RC**	
	- Set Idle	Adjust As Per Specifications		**X**	**RC**	
	- Recheck Timing	Adjust Per Specs with Proper Idle		**X**	**RC**	
	- Verify Coolant Temp	Confirm Temp Maintained w/in Spec.	**X**		**RC**	
	- Shutdown	Turn Off Engine	**X**		**RC**	
	- Check for Leaks	Check Engine & Cooling Sys for Leaks		**X**	**RC**	Mult. Oil Leaks
	Recheck Fluids					
	- Engine Oil	Top Off as Needed	**X**		**RC**	
	- Transmission Fluid	Top Off as Needed	**N/A**			
	- Power Steering Fluid	Top Off as Needed	**N/A**			
	- Coolant	Top Off as Needed	**X**		**RC**	
	Restart Engine					
	- Check Oil Pressure	Verify Oil Pressure Good	**N/A**			**Gauge INOP**
	- Warm to Op Temp	Use Laser Temp Gauge	**X**		**RC**	
	- Verify Cooling Fan	Check Elect Cooling Fan Function	**N/A**			
	- Verify Choke Opens	Check Choke Flap and Normal Idle	**N/A**			Changed to Manual
	- Verify Idle Speed	Adjust As Per Specifications	**X**		**RC**	
	- Verify Ignition Timing	Adjust As Per Timing Specifications	**X**		**RC**	
	- Recheck Idle Speed	Adjust As Per Specifications	**X**		**RC**	
	- Adjust Idle Mixture	Adjust Per Specs with Proper Idle	**X**		**RC**	
	- Recheck Idle Speed	Adjust As Per Specifications	**X**		**RC**	
	- Verify Coolant Temp	Confirm Temp Maintained w/in Spec.	**X**		**RC**	
	- Cycle Transmission	Move Through Gears to Circulate Fluid	**N/A**			
	- Check Trans Fluid	Add Fluid As Needed	**N/A**			
	- Shutdown	Turn Off Engine	**X**		**RC**	

ENGINE RUN COMMENTS
Poor initial running due to Solex carburetor issues. Replaced with Weber 32/36 DGV as equipped when purchased (rebuilt carburetor). That resolved most running/idling issues and permitted basic tuning. Oil pressure gauge sending unit bad. Gauge function questionable. Replacements ordered.

CHECKLISTS
Vincent Kitts
1970 Opel GT

SYSTEM	ITEM	TEST	PASS	FAIL	BY	NOTES
SAFETY & CONVENIENCE						
	Seat Belts	Check Secure & Functional	**X**		**RC**	
	Seats	Secure & Move Fore/Aft Freely	**X**		**RC**	
	Mirrors	Verify Secure & Proper View	**X**		**RC**	
	Sun Visors	Check Secure & Functional	**X**		**RC**	
	Spare Tire & Tools	Check Present & Secured	**X**		**RC**	
	Headlight Alignment	Align High and Low Beams	**X**		**RC**	
BODY & TRIM						
	Doors	Check Movement, Latches & Locks	**X**		**RC**	
	Side Windows	Check Up/Down Movement	**X**		**RC**	
	Vent Windows	Check Open/Close Movment & Latch	**X**		**RC**	
	Windshield	Check Clean & Leak Free	**X**		**RC**	
	Rear Window	Check Clean & Leak Free	**X**		**RC**	
	Trunk/Boot	Check Open/Close & Latch/Lock	**N/A**			
	Hood/Bonnet	Check Open/Close & Latch/Lock	**X**		**RC**	
	Convertible Top	Check Open/Close, Latch & Leaks	**N/A**			
	Trim & Badges	Check Installed, Correct & Secure	**X**		**RC**	
	Body Panel Alignment	Check & Adjust as Needed	**X**		**RC**	
	Paint	Touch Up As Needed, Buff to Shine	**X**		**RC**	
	Headliner	Secure & Taut	**X**		**RC**	
	Carpet	Secure & Free of Interference	**X**		**RC**	
	Interior Side Panels	Secure & Free of Interference	**X**		**RC**	

CHECKLISTS
Vincent Kitts
1970 Opel GT

SYSTEM	ITEM	TEST	PASS	FAIL	BY	NOTES
ROAD TEST						
	Verify All Secure	Check for Loose & Missing Parts/Tools	X		RC	
	Verify Documents	Registration & Insurance on Board?	X		RC	
	License Plates	Verify Properly Secured Front & Rear	X		RC	No Fr. Plate Holder
	Document Mileage	Indicate Odometer Miles in Notes -->	X		RC	**9844.5**
	Start/Warm Engine	Allow to Reach Operating Temp	X		RC	
	Check Tire Pressured	Verify Pressures to Specifications	X		RC	
	Inspect Everything	Visually Inspect for Leaks & Problems	X		RC	
	Check Transmission	Circulate Through Gears Verify Ops	X		RC	
	Check Brakes Hold	Verify Brakes Hold and Stop Rolls	X		RC	
	Check Parking Brake	Verify Holds at Idle When In Drive	X		RC	
	Electrical Load	Check Idles With Full Electrical Load	X		RC	
	First Drive	45 MPH MAXIMUM	X		RC	
	- Engine	Noises, Smoothness, Misses, Power?	X		RC	
	- Transmission	Shifts Through Gears & Reverse	X		RC	
	- Brakes	Light - Feel, Straight, Predictable	X		RC	
	- Carburetion	Hesitation, Stumbling, Backfires?		X	RC	Midrange Surging
	- Steering	Correct, Precise, Sloppy, Chatter?	X		RC	
	- Suspension	Smooth, Noisy, Bottoming, Wallowing?	X		RC	
	- Noises	Rattles, Knocks, Sqeeks, Squeals?	X		RC	
	- Gauge Readings	Temp, Oil Pressure, Charging, Etc.		X	RC	Oil Pressure INOP
	- Post Drive Inspection	Check for Leaks & Loose Items		X	RC	Mult. Oil Leaks
	Second Drive	60 MPH MAXIMUM	X		RC	
	- Engine	Noises, Smoothness, Misses, Power?	X		RC	
	- Transmission	Shifts Through Gears & Reverse	X		RC	
	- Brakes	Light - Feel, Straight, Predictable	X		RC	
	- Carburetion	Hesitation, Stumbling, Backfires?		X	RC	Midrange Surging
	- Steering	Correct, Precise, Sloppy, Chatter?	X		RC	
	- Suspension	Smooth, Noisy, Bottoming, Wallowing?	X		RC	
	- Noises	Rattles, Knocks, Sqeeks, Squeals?		X	RC	Mystery Knock
	- Gauge Readings	Temp, Oil Pressure, Charging, Etc.		X	RC	Oil Pressure INOP
	- Post Drive Inspection	Check for Leaks & Loose Items		X	RC	Mult Oil Leaks

TEST DRIVE COMMENTS
Starting mileage estimated due to original speedometer failure. Oil pressure gauge problem resolved subsequent to first test drives. HOWEVER, pressure is VERY LOW (light comes on) after driving when returning to idle. Multiple oil leaks from engine and transmission. Neither resolvable without significant work. Low compression readings (90, 110, 90, 100) indicate a rebuild is necessary in the near future. Midrange surging resolved by rejetting Weber carburetor for current fuel blends. Myserty knocks determined to be exhaust hangar (extra bumper installed) and mis-seated rear spring (re-seated).

CHECKLISTS
Vincent Kitts
1970 Opel GT

SYSTEM	ITEM	TEST	PASS	FAIL	BY	NOTES
PRE-DELIVERY DETAILING						
	Wash Exterior	Wash As Needed	X		RC	
	Wax/Polish Exterior	Wax/Polish As Needed	X		RC	
	Polish Brightwork	Polish All Chrome & Stainless Trim	X		RC	
	Armorall Tires	Tire-Black or Similar Tire Treatment	X		RC	
	Vacuum Interior	Vacuum Carpet Etc.	X		RC	
	Armorall Interior	Armorall Dash, Seats, Side Panels Etc.	X		RC	
	Clean Windows	Clean Inside/Outside All Windows	X		RC	
	Detail Engine Bay	Clean as Necessary	X		RC	
	Clean/Organize Trunk	Clean & Secure Spare/Tools Etc.	X		RC	
	Detail Undercarriage	Clean Underneath & Check for Leaks	X		RC	
	Check All Fluids	Verify Fluid Levels	X		RC	
	Verify Documents	Registration & Insurance on Board?	X		RC	
	Document Odometer	Record Total Miles at Delivery	X		RC	**9917.8**
	Starting Odometer	As Documented Pre-Test Drive	X		RC	**9844.5**
	Miles Driven	Calculate Miles Driven Since Restored	X		RC	**73.3**

DELIVERY NOTES & COMMENTS

Overall, this car runs and drives very well. However, the engine is definitely showing signs of its age (suspected to have accumulated 135,000+ miles) and will require rebuilding. Between it's low compression and apparently tired starter (spins slowly) cold starting can be difficult. While it does not appear to be burning oil, it does have numerous leaks that would require more effort to eliminate than would be worth the effort given the overall condition of the engine. Despite these issues with the engine, once started, it does run smooth and strong. Driveability is very good.

Oil pressure is a major concern with this engine. Once the oil has reached full operating temperature, it will easily fall to nearly zero when returned to idle. This is most likely due to the engine's main bearings, connecting rod bearings and/or camshaft bearings being worn to the point where there is no longer enough resistance to the flow of oil to provide the entire engine with sufficient oil pressure. This is another sign that the engine is due for a rebuild and it is likely to be the ultimate cause of engine failure due to lack of proper lubrication.

Note that these cars are very prone to vapor lock after being parked for short periods of time. Review the Operations Guide for recommended starting procedures in various conditions.

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1970 GT

Operations Guide

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OPERATIONS GUIDE

1970 Opel GT

for

Vincent Kitts

This is a supplement to the original Opel owner's manual for the 1970 Opel GT. It is not intended to be a comprehensive manual. This is to be used as a guide to those items, systems and/or procedures that may differ from the original car as delivered when new and/or that may seem unfamiliar to drivers who have not driven a car of this vintage.

ENGINE START: It is important to note that this car's fuel system is managed via a mechanical carburetor – as opposed to most modern vehicles which utilize computer-controlled fuel injection. Therefore, it is not a simple matter of "start-and-go".

When the engine is cold, the carburetor's manually-controlled choke mechanism enriches the fuel/air mixture to allow the engine to operate until it reaches normal operating temperature. This results in a period of time where the engine will be sluggish and overly sensitive to operator input via the accelerator pedal. It will also idle at a higher-than-normal RPM while the choke is active.

Cold Start: When starting the engine cold, the following procedure should be observed:

- Insert the key in the ignition and rotate it clockwise to the "RUN" position.
- Pull the Choke knob OUT (see Figure 1). The amount of choke applied (how far to pull out) will be dependent upon ambient conditions. The colder the temperature, the further out the knob should be pulled.

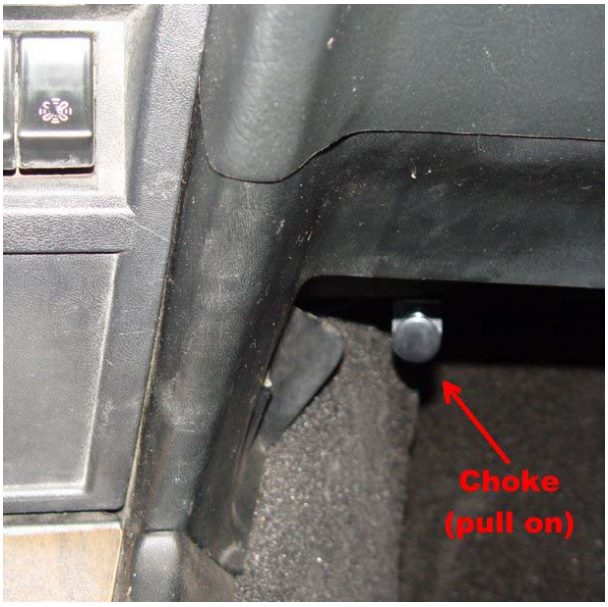

Figure 1 – Choke Knob

- Pump the accelerator 2 – 3 times.
- Rotate the ignition key clockwise to the "START" position to engage the starter.
    - If the starter does not engage, leave the key in the "RUN" position and press the Auxillary Starter Engage button on the left side of the console (see Figure 2).

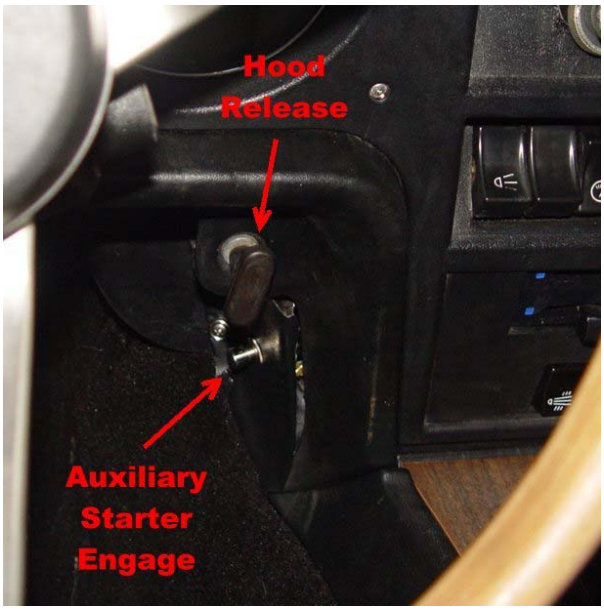

Figure 2 – Auxiliary Starter Engage Button

- If the engine does not start immediately, pump the accelerator a couple more times while the starter is engaged.

- Once the engine starts, disengage the starter and allow the ignition key to return to the "RUN" position (or leave the key in the "RUN" position if the Auxiliary Starter Engage button was used).
- Note that when cold, some "finessing" of the accelerator may be necessary to keep the engine running for the first 15 – 30 seconds before it can be allowed to idle on its own.
- When cold, it is not at all uncommon to have to start the engine 2 – 3 times before it will idle on its own.
- IMPORTANT: Do not keep the starter engaged (cranking the engine) for more than 15 seconds at a time or the starter may overheat. Allow sufficient time to pass between starting attempts so that the starter can cool down.
- Once started, allow the engine to run for 30 – 60 seconds before attempting to drive.
- Note that the engine will continue to run at a high idle for several minutes to prevent stalling until the engine reaches operating temperature. Keep this in mind as it will require increased braking pressure to keep the car from creeping when stopped.
- As the engine warms up, push in the choke knob (in progressive steps) until the engine is fully warm and capable of running properly with the choke knob all the way in (choke disengaged).
- NOTE: These engines are notoriously cold-blooded and can be particularly difficult to start after sitting for a few days. This is especially true of engines with low compression (worn). It is advisable to keep a can of starter fluid on-hand.

Figure 3 – Air Cleaner Inlet

When unable to start the engine after it has been sitting for a days, spray starter fluid into the air cleaner inlet (see Figure 3) and then attempt to start the engine before the starter fluid fully evaporates.

Warm Start: When re-starting the engine after it has already warmed up, the following procedure should be observed:

- Insert the key in the ignition and rotate it clockwise to the "RUN" position. *Without pumping the accelerator*, continue past the "RUN" position to the "START" position to engage the starter (again, use the Auxiliary Starter Engage button if necessary).

- If the engine starts immediately, release the ignition key and allow it to return to the "RUN" position. Once the engine stabilizes into a smooth idle, you are ready to go. The engine may require some "finessing" of the throttle for a time before it can settle into a smooth idle.

- If the engine does not start immediately, DO NOT PUMP THE ACCELERATOR. Instead, *slowly* depress the accelerator all the way to the floor and hold it there until the engine "catches". Then pump/finesse the accelerator as necessary to keep it running until it can idle on its own.

- **NOTE:** This engine design is very susceptible to *vapor lock* due to "heat soaking" of the carburetor because the carburetor sits right above the exhaust manifold. When the engine is turned off after reaching operating temperature, the heat from the exhaust manifold rises and super-heats the carburetor to the point of actually *boiling* the fuel inside the carburetor's float bowl. By pressing the accelerator to the floor (not pumping), the carburetor opens fully and while the starter is cranking it draws air through the carburetor – cooling it enough to stop the fuel from boiling.

- If – after multiple attempts – it still fails to start, pump the accelerator a few times (allowing cooler fuel to replace the fuel that is pumped out of the carburetor) and repeat the procedure above. If the engine still fails to start, open the hood and allow several minutes for the carburetor to cool with the additional air flow.

Flooded Start: If the engine does not start and you smell gasoline fumes, follow the procedure below:

- Insert the key in the ignition and rotate it clockwise to the "RUN" position. *Hold the accelerator to the floor* as you continue past the "RUN" position to the "START" position to engage the starter.

- If the engine starts immediately, release the ignition key and allow it to return to the "RUN" position while *simultaneously* releasing the accelerator. Once the engine stabilizes into a smooth idle, you are ready to go. Note that this may cause the choke to re-engage – resulting in the same high idle as when the engine is cold. This will resolve itself to a normal idle once the choke has heated up.

IMPORTANT NOTE: Do ***not*** leave the key in the "RUN" position for an extended period without the engine running. Doing so will damage the electronic ignition.

TRANSMISSION: Your Opel GT is equipped with a standard 4-speed manual-shift transmission. The shift pattern is the industry-standard "H-Pattern". Reverse is accessed by lifting up on the collar located beneath the shift knob, then moving the shift lever all the way to the left, then forward.

HEADLIGHTS: The Opel GT has a unique hidden-headlight mechanism. It is operated manually using a lever located on the left side of the front section of the center console (see Figure 3). The headlights turn on and off via this lever in addition to being used to open and close the headlight "buckets".

Figure 3 – Headlight Lever

Pushing the lever forward rotates the headlight buckets to expose the headlights. When fully opened and locked, the headlights turn on. Pulling the lever back rotates the headlight buckets closed and turns the headlights off. Do note that the mechanism requires an "authoritative" motion to lock into either position and the resulting sound of the buckets "crashing" into position may be a bit unnerving at first, but the firm and deliberate movement on the lever is required to get the mechanism to properly lock.

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1970 GT

Specifications & Maintenance

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SPECIFICATIONS & MAINTENANCE

1970 Opel GT

for

Vincent Kitts

This document is intended to provide the specifications that are specific to this particular vehicle and is not all-inclusive. Consider it a supplement to the manufacturer's Owners Manual that was provided with the car when new.

VECHICLE SPECIFICATIONS: The following information

- **Model:** #93 (2-Door GT Coupe)
- **Dimensions:**
  - Wheelbase: 95.7"
  - Overall Length: 161.9"
  - Overall Width: 62.2"
  - Track:
    - *Front:* 49.4"
    - *Rear:* 50.6"
  - Overall Height: 48.2"
  - Curb Weight: 2112 lbs.
- **Engine:** 1,9 Liter In-Line 4-Cylinder
  - In-Head Camshaft – 2 Valves per Cylinder
  - 102 Horsepower @ 5400 RPM
  - 115 Ft. Lbs. Torque @3000 RPM
  - Compression Ratio – 9.0:1
  - Carburetor – Weber 32/36 DGV – Manual Choke
- **Transmission:** 4-Speed Manual Floor Shift
- **Rear Axle:** Solid ("live") Axle - 3.44:1 Final Ratio
- **Suspension:**
  - Front: Independent – Single Transverse Leaf Spring
  - Rear: Solid Axle, Trailing Arms, Coil Springs, Panhard Rod.

- **Brakes:** Hydraulic - Power Assisted
  - Front: Disc
  - Rear: Drum
- **Color:** "Chrome Yellow" (originally "Strato Blue")

MAINTENANCE SPECIFICATIONS:

- **Ignition System:**
  - Spark Plugs: Champion L87YC
  - Spark Plug Gap: 0.30"
  - Ignition Timing: 0 Degrees (TDC) with both advance and retard hoses disconnected and plugged. Idle *must* be set below 800 rpm when checking timing.
- **Engine Oil:**
  - Oil Brand/Type: Shell Rotella T (or other with ZDDP additive)
  - Oil Viscosity: 15W40
  - Oil Capacity (w/filter change): 3.25 quarts
  - Oil Filter: STP S3614 or Fram PH966B
- **Air Filter:** MANN 15555/1 (requires trimming)
- **Valve Clearance:** 0.12" intake & exhaust (hot)
- **Idle Speed:** 850-900 RPM (recommend 1000-1100 RPM)
- **Transmission Fluid:**
  - Type: 80W90 Gear oil
  - Capacity: 2.5 quarts
- **Engine Coolant:**
  - Type: Any aluminum-compatible antifreeze.
  - Capacity: Approximately 6-7 quarts.
  - Mixture: 50/50 antifreeze/water recommended
  - Thermostat: 160 Degrees (F)
- **Fuel Tank:** 14.5 Gallons
- **Tires:**
  - Size: 175/70R-13
  - Recommended Inflation (cold):
    - *Front:* 25 psi
    - *Rear:* 25 psi
- **Brake Fluid:** Valvoline Synthetic Brake Fluid (NOT DOT3)
- **Differential Fluid:**
  - Type: 80W-90W Gear Oil
  - Capacity: 2.5 pints

SERVICE INTERVALS: The following service intervals are recommended by Midlife Classics to keep your car in top condition:

- **Oil & Filter Change:** Every 3,000 miles or 12 months (whichever comes first)
- **Valve Lash Adjustment:** Every 6,000 miles
- **Transmission Fluid:** Check every 15,000 miles or 5 years (whichever comes first)
- **Air Filter:** Every 15,000 miles. More frequently in dusty conditions
- **Coolant (antifreeze):** Change every 2 years
- **Brake Fluid:** Change every 2 years.
- **Tire Rotation & Balancing:** Every 5,000 miles
- **Differential (rear axle) Fluid:** Check every 15,000 miles
- **Replace Fuel Filter:** Every 15,000 miles (inside the fuel pump)

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MAINTENANCE LOG

1970 Opel GT
for
Vincent Kitts

Indicate the actual odometer reading when each service is performed under the appropriate mileage interval.

MAINTENANCE ITEM	INTERVAL MILES	INTERVAL MONTHS	3,000	6,000	9,000	12,000	15,000	18,000	21,000	24,000	27,000	30,000
Engine Oil & Filter Change	3,000	12										
Valve Lash Adjustment	6,000											
Transmission Fluid Check	15,000	60										
Air Filter Replacement	15,000	36										
Coolant Change		24										
Brake Fluid		24										
Tire Rotation & Balancing	5,000											
Differential Fluid Check	15,000	48										
Replace Fuel Filters	15,000											

NOTE: Odometer reading at the end of the restoration was 9844.5 miles. This should be used as the new "zero miles" point when referencing maintenance intervals

IMPORTANT: An engine oil and filter change should be performed after the first 500 miles (at 10,344 miles).


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