

EUROPA
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MISCELLANEOUS

J.C. WHITNEY HAS AN ASSORTMENT OF METRIC NUTS AND BOLTS AVAILABLE. THE SMALLER OF THE ASSORTMENTS IS LARGE ENOUGH TO SPLIT WITH SOMEONE ELSE. ALSO IF YOU WANT TO GET SOME LOTUS SIDE STRIPES, WHITNEY SELLS CANNON'S SIDE STRIPES FOR \$5 WHICH IS HALF OF WHAT YOU PAY TO GET THEM DIRECT FROM CANNON.

IF YOU HAVE TO REPLACE YOUR EXHAUST PIPE, RENAULT MAKES A CLAMP FOR THE MANIFOLD-PIPE CONNECTION THAT HAS THE BOLTS WELDED INTO ONE HALF OF THE CLAMP: GET THIS TYPE OF CLAMP AS IT REALLY FACILITATES THE OPERATION (PERHAPS LOTUS MAKES THE SAME CLAMP BUT MY "LOCAL" DEALER DIDN'T HAVE ANY). ALSO RENAULT MAKES A TOOL THAT IS APPARENTLY USED FOR BOTH REMOVING WHEEL LUGS THAT ALSO FITS THE THREE NUTS THAT HOLD THE VALVE COVER DOWN. THESE THREE NUTS ARE AN "OFF" SIZE BEING SOMEWHERE BETWEEN 20 AND 21 MM'S AS I REMEMBER.

IF YOU WANT AN INFORMATIVE AND INTERESTING CATALOGUE OF PERFORMANCE OPTIONS, SEND 50¢ TO MOTORSPORT EAST, POB 261, OWINGS MILLS, MARYLAND 21117; THE CATALOGUE IS FULL OF GOODIES AND GOOD INFORMATION ON RENAULT ENGINES AND IS REALLY WORTH THE MONEY. ALSO LOTUS CENTRAL, 35093 SCHOOLCRAFT RD, LIVONIA, MICHIGAN 48150, PERIODICALLY PUTS OUT CIRCULARS WITH PERFORMANCE AND STANDARD PARTS IN THEM; DROP THEM A CARD AND REQUEST TO BE PUT ON THEIR MAILING LIST; LC'S PARTS DEPARTMENT IS ALSO VERY QUICK, I CAN GET A PART USUALLY WITHIN A WEEK.

BANDAI Co. LTD. (JAPANESE) MAKES A LOTUS 47GT MODEL 1:20 SCALE, THEIR MODEL #K 112-598, THAT IS IMPORTED BY ASSOCIATED HOBBY MANUFACTURERS, PHILADELPHIA, PA. THE KIT IS A REPLICA OF THE LOTUS 47/46 (I.E. SERIES 1), IS MOTORIZED, HAS WORKING SUSPENSION AND STEERING, AND HEAD LIGHTS THAT LIGHT (!) AND COSTS \$5.98.

WORD OF ADVICE ABOUT STEBRO MUFFLERS. THE PRETTY BLACK PAINT THAT COMES ON THE MUFFLER IS FOR APPEARANCE ONLY. IT QUICKLY BURNS OFF AND THE MUFFLER STARTS RUSTING. IT'S BEST TO REMOVE THE PAINT WITH A REMOVER ("ZIP-STRIP" WORKED FINE) AND REPAINT IT WITH A GOOD HIGH TEMPERATURE PAINT BEFORE INSTALLING IT.

FACTORY APPROVED AIR CONDITIONER FOR THE EUROPA TWIN-CAM. IT USES A ROTARY COMPRESSOR WHICH DRIVES OFF THE WATER PUMP PULLY NOT THE CAMSHAFT.

COOLAIRE MFG. CORP.
10400 S.W. 187TH STREET
MIAMI, FLORIDA

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BODY & INTERIOR

THE TWO HINGES THAT OPERATE THE REAR HOOD EVENTUALLY LOOSEN UP, HOWEVER YOU MIGHT NOT NOTICE THIS AS YOU CAN'T SEE THEM WHEN YOU ARE OPENING THE HOOD. CHECK THESE EVERY SO OFTEN FOR TIGHTNESS. IF YOU INSTALL THE ALUMINUM SHEET TO SUPPORT THE INSULATION MENTIONED IN THE NEXT PARAGRAPH THE EASIEST WAY TO TIGHTEN THESE IS TO DRILL A $1\frac{1}{2}$ " HOLE IN THE VERTICAL LIP OF THE ENGINE COMPARTMENT DIRECTLY UNDER THEM, THROUGH WHICH YOU CAN FIT A WRENCH; AFTER YOU ARE THROUGH SEAL THE HOLE WITH A PIECE OF ALUMINUM GLUED OVER IT.

TO PREVENT THE ENGINE COMPARTMENT INSULATION FROM REPEATEDLY SAGGING DOWN, I, AFTER MANY UNSUCCESSFUL ATTEMPTS AT GLUING, CUT A PIECE OF ALUMINUM SHEET WIDE ENOUGH TO FIT IN BETWEEN THE SEAT BELT RODS AND ROUGHLY AS HIGH AS THE DISTANCE BETWEEN FRAME AND THE TOP OF THE ENGINE COMPARTMENT. THE SIDES WERE FLANGED, ABOUT 1", FOR STRENGTH, THEN THE SHEET SHOVED UP AGAINST THE INSULATION AND UP UNDER THE LIP OF THE REAR OF THE ENGINE COMPARTMENT AS FAR AS IT WOULD GO; NEXT THE SEAT CUSHIONS WERE REMOVED AND ONE HOLE WAS DRILLED BEHIND EACH ALL THE WAY THROUGH THE INSULATION AND ALUMINUM (IT TAKES AROUND AN 8" LONG DRILL) AND FLUSH HEAD BOLTS WERE USED TO SECURE THE ALUMINUM WHICH CAN BE TIGHTENED UP TO COMPRESS THE INSULATION. THIS WAS DONE OVER A YEAR AGO AND WORKS VERY WELL.

FOR OBVIOUS REASONS A NIGHT AND DAY MIRROR WOULD BE WELCOME IN A EUROPA. THE MIRROR ON THE PORSCHE 914 IS N/D, AND IS OF THE PROPER PROPORTIONS I.E. LONG AND NARROW; FURTHER IT ATTACHES TO THE WINDSHIELD BY MEANS OF A DOUBLE ADHESIVE PAD; UNFORTUNATELY THE COST IS SOMETHING LIKE \$25 SO I'VE BEEN LOOKING FOR ONE OFF OF A WRECK. THE ONLY THING I HAVE NOT CHECKED IS WHETHER THERE IS SUFFICIENT ADJUSTMENT TO COMPENSATE FOR THE MORE STEEPLY RAKED WINDSHIELD OF THE EUROPA. NOTE: DO NOT ATTEMPT TO REMOVE THE METAL TAB ON WHICH THE LOTUS REAR VIEW MIRROR IS MOUNTED; PRYING ETC. MAY CRACK THE WINDSHIELD AS THESE TABS ARE AFFIXED WITH A SPECIAL EPOXY THAT IS VERY STRONG.

I HAD HIGH OIL PRESSURE AS THE GAUGE WENT UP TO 90 LBS. AND STAYED THERE. SOLUTION: THE GAUGE ITSELF OR THE PRESSURE RELIEF VALVE SEEMED THE MOST LIKELY SUSPECTS; BUT SINCE GOING INTO THE DASH OR DROPPING THE OIL PAN ENTAILED A LOT OF WORK I DECIDED TO CHECK SOME LESS LIKELY CAUSES FIRST. MY DIP STICK READ HALF WAY BETWEEN FULL AND ONE QUART LOW. IT HAD BEEN AT THAT READING FOR 3,000 MILES. I DO NOT LIKE TO OPEN A CAN OF OIL JUST TO USE HALF A QUART, BUT THE THOUGHT OF ALL THAT WORK MAKES ME DESPERATE; SO I DO IT. I POUR IN HALF A QUART AND THE DIP STICK STILL READS HALF A QUART LOW. I POUR IN THE OTHER HALF AND THE LEVEL IS STILL NOT QUITE TO THE FULL MARK. I FIRED UP THE ENGINE AND THE GAUGE WENT UP TO 60 LBS. AND STAYED THERE. EVIDENTLY THE DIP STICK IS NOT TO BE TRUSTED.

I RAN OUT OF GAS ON THE FREEWAY ONE DAY WHEN THE GAUGE WAS NOT ON E. EVIDENTLY IT IS NOT ACCURATE BELOW 1/4. SOLUTION: START LOOKING FOR FILLING STATIONS ABOUT 200-250 MILES AFTER A FILL UP.

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ELECTRICAL

TESTING NON-OPERATING ELECTRICAL GAUGES--IF THE WATER TEMPERATURE, FUEL OR OIL PRESSURE GAUGE FAILS TO WORK THERE IS AN EASY WAY TO DETERMINE WHETHER THE TROUBLE IS THE SENDER, OR THE WIRING AND THE GAUGE. THIS WORKS BECAUSE WITH THE IGNITION ON THERE IS POWER TO THE GAUGES AND THE SENDERS COMPLETE THE GROUND. TO TEST, REMOVE THE NON-GROUNDED WIRE FROM THE SENDER AND GROUND THE WIRE. TURN ON THE IGNITION AND NOTE: (IGNITION SHOULD NOT BE LEFT ON FOR AN EXTENDED PERIOD OF TIME) IF THE GAUGE READS MAX I.E., FUEL FULL, MAX OIL PRESSURE OR WATER TEMPERATURE, THEN THE WIRING AND THE GAUGE ARE OK, AND PROBLEM IS WITH THE SENDER. IF THE GAUGE FAILS TO OPERATE WITH SENDER GROUNDED THEN PROBLEM IS WITH WIRING AND/OR GAUGE.

WIRING FOR DRIVING LIGHT--MY S1 EUROPA IS WIRED FOR THE INSTALLATION OF A DRIVING LIGHT THAT WOULD GO ON WITH THE HIGH BEAMS AND OFF WITH THE LOW BEAMS. THIS IS DONE BY HAVING AN ADDITIONAL "BULLET" TYPE CONNECTOR IN THE WIRING WHERE THE LEFT AND RIGHT HEADLIGHTS ARE CONNECTED TOGETHER (RIGHT ABOVE THE AIR INLET). BY RUNNING THE GROUND WIRE INTO THE COCKPIT AND THROUGH A SWITCH ON/OFF COULD BE CONTROLLED. THIS DOESN'T SHOW UP ON THE WIRING DIAGRAM, AND I DIDN'T DISCOVER IT UNTIL A FEW MONTHS AFTER I INSTALLED MY DRIVING LIGHT! (I MOUNTED THE LIGHT RIGHT BEHIND THE AIR INLET SCREEN)

HORN RELAY--IF YOUR HORN ISN'T TOO LOUD OR DOESN'T WORK ALL THE TIME, THE TROUBLE COULD BE THAT THE HORN BUTTON ISN'T MAKING SUFFICIENT CONTACT TO POWER THE HORN. THE EASIEST WAY TO REMEDY THIS IS TO BUY A GENERAL TYPE RELAY IN AN AUTO STORE AND INSTALL IT. THIS MADE MY HORN MUCH LOUDER AND IT WORKS ALL THE TIME.

I HAD FUSES BLOWING FREQUENTLY ON MY EUROPA AND THE FOLLOWING IS HOW I SOLVED THE PROBLEM. I DISCOVERED THAT THE ROCKER SWITCHES THAT OPERATE THE POWER WINDOWS WERE STICKING; SO THAT THE MOTOR CONTINUED TO OPERATE EVEN AFTER THE SWITCH HAD BEEN RELEASED. SOLUTION: A) REPLACE THEM, B) SPRAY THEM WITH CONTACT CLEANER, OR C) NOTICE YOUR AMMETER AFTER THE RAISING OR LOWERING OF THE WINDOWS, IF IT SHOWS A CURRENT DRAIN JIGGLE THE SWITCHES GENTLY UNTIL THE AMMETER GIVES A NORMAL READING.

THE SEARS DIE HARD FOR A PORSCHE WILL FIT IF YOU CHANGE THE CONNECTORS ON THE CABLES.

LUCAS HAS A LISTING FOR DUCILLIER PARTS AND DISTRIBUTORS IN A NEW CATALOG. WHILE LOOKING FOR A SOLUTION TO DISTRIBUTOR MODS, I FOUND A CAM THAT WAS 4° OFF AT THE CAM. A REPLACEMENT DISTRIBUTOR THROUGH LUCAS IS ABOUT \$25 AND IT IS NOT THE SAME AS THE ONE ON AN R-16 RENAULT. THEY HAVE DIFFERENT PART NUMBERS FOR THE EUROPA AND TYPES OF R-16'S.

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WHEELS, TIRES & SUSPENSION

PIRELLI IS NOW MANUFACTURING TIRES TO FIT YOUR EUROPA TWIN-CAM (175/70-13). I PUT A FULL SET (FROM WESCO TRACK & TIRE) ON MY TWIN-CAM, AND THERE IS A SUBSTANTIAL IMPROVEMENT OVER THE STOCK FIRESTONE TIRES. THE PIRELLI COMPANY ALSO MAKES THESE TIRES IN A 165/70-13 SIZE. AT THIS POINT A BIT OF MENTAL REFRESHMENT MAY BE IN ORDER. A 185/70-13 HAS THE SAME ROLLING RADIUS AS A 165-13. A 175/70-13 HAS THE SAME ROLLING RADIUS AS A 155-13. A 165/70-13 HAS THE SAME ROLLING RADIUS AS A 145-13. SOUND INTERESTING?

EXCESSIVE REAR CAMBER ON THE EUROPA'S CAN BE CORRECTED BY USING THE BUSHINGS FROM THE FRONT SUSPENSION OF THE '62 OR NEWER MG MIDGETS LOWER A FRAME. ABOUT \$7 WILL GET THE SET FROM THE BAP-GEON MAN, OR YOU CAN GET EIGHT OF THEM FROM LOTUS EAST FOR \$2.50/EACH. A CONSIDERABLE SAVINGS THROUGH BAP-GEON.

COOLING SYSTEM

I FOUND MY EUROPA OVERHEATED DUE TO THE FAN BECOMING INOPERATIVE DUE TO ACCUMULATION OF ROAD GRIME AND MOISTURE INSIDE THE FAN MOTOR HOUSING. SOLUTION: CLEAN THE BRUSH CARRIER PLATE AND CONTACTS WITH CONTACT CLEANER AND A TOOTH BRUSH AND WATER-PROOF THE FAN HOUSING BY USING LIQUID RUBBER OR SILICONE SEAL AROUND THE SEAMS AND THEN WRAPPING THE WHOLE THING WITH PLASTIC TAPE. NOTE: THERE IS ALSO A SIMPLER WAY OF TESTING THE MOSTA TEMPERATURE SWITCH THAN THE ONE SHOWN IN THE WORKSHOP MANUAL SEC. M P47. NO BATTERY OR PILOT LIGHT IS NECESSARY. SIMPLY STICKING THE TIP OF THAT THERMOSTAT IN HOT WATER WILL PRODUCE AN AUDIBLE CLICK. HOWEVER IF YOU ARE THE SCIENTIFIC TYPE WHO LIKES TO DO THINGS ACCURATELY, YOU MAY HEAT YOUR WATER TO THE CORRECT TEMPERATURE AND CONNECT THE LEADS OF A MULTI-TESTER, VOM OR VTVM (SET TO READ OHMS OR RESISTANCE) TO THE THERMOSTAT. YOU WILL GET A SHORT (0 OHMS) AT 82° C AND AN OPEN CIRCUIT (INFINITY) AT 68° C.

FUEL SYSTEM

I HAD UNEVEN IDLING AND HIGH REVVING DUE TO STICKING THROTTLE CABLE. THE INNER CABLE WAS ACTUALLY CUTTING INTO THE BRACKET ON THE TRANSMISSION TUNNEL. THE OUTER HOUSING WAS ALSO MOVING TOO FREELY. SOLUTION: FROM PREVIOUS EXPERIENCE I KNEW THAT MOST SPORTS CARS USING THROTTLE CABLES HAVE CONNECTORS AT BOTH ENDS OF THE CABLE TO KEEP THE OUTER HOUSING FIRMLY IN PLACE AND LET THE INNER CABLE MOVE FREELY. THE EUROPA ONLY HAS ONE CONNECTOR NEAR THE CARBURETOR. I GOT A NEW CABLE PLUS A SECOND CONNECTOR LIKE THE ONE AT THE ENGINE END OF THE CABLE. I REAMED OUT THE HOLE ON THE BRACKET ON THE TRANSMISSION TUNNEL UNTIL THE CONNECTOR FIT. THEN I INSTALLED THE CABLE WITH CONNECTORS AT BOTH ENDS OF THE OUTER HOUSING AND HAVE HAD NO FURTHER TROUBLE WITH UNEVEN IDLE. NOTE: THE BRACKET TO BE REAMED IS SMALL AND IF YOU ARE NOT CAREFUL YOU MAY OPEN ONE SIDE OF IT. IF THIS HAPPENS DO NOT DESPAIR. CONTINUE TO REAM CAREFULLY UNTIL THE CONNECTOR FITS. INSTALL THE CONNECTOR AND ITS LOCKING NUT, AND THEN USE SOLDER TO FILL IN THE OPEN SIDE.

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DRIVE TRAIN

I HAD TWO PROBLEMS ON MY EUROPA WITH MY SHIFT LINKAGE, ONE WAS RATTLING, AND THE OTHER VAGUENESS OF SHIFTING. THESE PROBLEMS WERE BOTH CAUSED BY THE HARD RUBBER INSERT ON THE END OF THE SHIFT LEVER WEARING OUT. THE SHIFT LEVER IS FLATTENED AT THE END AND HAS A HOLE DRILLED THROUGH IT; THE SHIFT LINKAGE ROD IS FORKED AT THE END; THE LEVER FITS INSIDE THE FORK AND A BOLT GOES THROUGH THEM, THERE IS A HARD RUBBER INSERT THAT GOES BETWEEN THE BOLT AND THE HOLE IN THE SHIFT LEVER; ONCE THIS WEARS OUT THE LEVER WILL RATTLE AND SHIFTING WILL BE VAGUE. THE ONLY WAY TO REMEDY THIS IS TO REMOVE THE FRONT HALF OF THE SHIFT LINKAGE WHICH MEANS DISCONNECTING IT BEHIND THE ENGINE (OR RATHER I GUESS THAT'D BE IN FRONT OF THE ENGINE) AND PUSHING IT OUT THE FRONT OF THE BOX BEAM AND EXTRICATING IT FROM THE FRONT TRUCK (OR TAKE OUT THE SPARE TIRE AND AIR INLET SCREEN). WHILE YOU ARE DISCONNECTING THE LINKAGE IN FRONT OF THE ENGINE, CHECK THE ROD ENDS (I.E. BALL-TYPE JOINTS) TO INSURE THAT THEY MOVE VERY FREELY; TO CHECK THE BOTH OF THEM YOU'LL HAVE TO DISCONNECT THE LINKAGE GOING TO THE REAR TOO. IF THESE DON'T MOVE VERY FREELY, REPLACING THEM WILL REDUCE SHIFT EFFORT; IF YOU REPLACE THEM DON'T GET LOTUS REPLACEMENT PARTS AS THEY ARE EXPENSIVE AND ONLY FAIR QUALITY, GET FABROID-- THEY ARE A RIGHT HAND THREADED MALE, SHAFT $5/16$ " DIAMETER, $1\frac{1}{2}$ " LONG AND THE HOLE IN THE SWIVEL IS ALSO $5/16$ ". OUTSIDE MEASUREMENT OF THE SWIVEL HOUSING IS 1". ONCE THE LINKAGE IS OUT THE PROBLEM CAN BE REMEDIED BY FINDING A REPLACEMENT FOR THE HARD RUBBER INSERT; I USED A BRASS INSERT WHICH REQUIRED DRILLING OUT THE HOLE IN THE SHIFT LEVER A LITTLE BUT IT WAS OUT OF ROUND ANYHOW. THE IMPROVEMENT IN SHIFTING WAS IMMENSE AND THIS ELIMINATED THE RATTLE TOO.

THE FRONT PADS ON MY S1 "FROZE" IN THE CALIBERS DUE TO CORROSION; ON BOTH SIDES THE INSIDE PAD WAS FROZEN INTO PLACE. GETTING THEM OUT WAS A REAL PROBLEM BUT IT WAS MANAGED WITHOUT TAKING THE CALIBERS OFF; IF YOU WANT DETAILS ON HOW THIS WAS DONE WRITE AS ITS A BIT HARD TO EXPLAIN WITHOUT AN ILLUSTRATION. IN THE REAR, CORROSION CAN "FREEZE" THE SLAVE CYLINDER THAT IS SUPPOSED TO SLIDE IN THE CUT OUT PROVIDED IN ORDER TO ACTIVATE THE "TRAILING" BRAKE SHOE. ACTUALLY IT IS HARD TO TELL WHETHER THESE ARE FROZEN IN PLACE AS THEY WILL ONLY MOVE WHEN THE BRAKES ARE APPLIED HARD WHICH OF COURSE REQUIRES THAT THE BRAKE DRUM BE ON. CAREFULLY TAP THEM BACK AND FORTH WITH A HAMMER TO GET AN IDEA OF HOW MUCH RESISTANCE TO MOVEMENT THERE IS. I THINK MINE HAVE TOO MUCH RESISTANCE AS MY BRAKE PEDAL TRAVEL CHANGES FROM TIME TO TIME E.G. WHEN I GO OVER A BIG BUMP WHICH, I THEORIZE, MIGHT JAR THE CYLINDER LOOSE. AM STILL TINKERING WITH THIS PROBLEM IF YOU HAVE ANY SUGGESTIONS PLEASE WRITE.