



Luxclassics

MERCEDES-BENZ 190SL



A pictorial retrospective of the complete restoration



MERCEDES-BENZ 190SL

RESTORATION IS ALL ABOUT CHOICES - INDIVIDUAL DECISIONS INFLUENCED BY EXPERT ADVICE, AN EYE FOR DETAIL, HISTORY AND AN ARTISTIC APPRECIATION OF FORM AND DESIGN. RESTORING A CLASSIC CAR IS, WE BELIEVE, LIKE RESTORING A PIECE OF ART - A COMPLEX MOVING SCULPTURE.

The object of any restoration is to return a vehicle to its former glory. Whether that be to original factory specification, upgraded for an improved driving experience or simply rejuvenated to reflect the owner's personal tastes, the process ensures that structurally and mechanically it is as good as, if not better, than when it left the factory. Naturally in all cases function should prevail over form.

With every restoration, Parry Chana with LuxClassics strive for excellence, but principally we aim to achieve our customers vision whilst managing and meeting their expectations. We pour thousands of hours of craftsmanship, skill and enthusiasm into every project - this restoration journal documents the process from start to finish.

A handwritten signature in black ink, appearing to read "Parry Chana". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Parry Chana - LuxClassics

MERCEDES-BENZ 190SL MODEL HISTORY

The Mercedes-Benz 190SL and the 300SL made history at the New York International Motor Sports Show in February 1954 as the first new production Mercedes to be unveiled outside Germany. It was no coincidence that New York was selected as the stage for the launch of the first two SL models. An American importer, Max Hoffman, had intensively promoted the design and production of the two new sports car models, adopting in historical terms a role similar to that of Emil Jellinek, a major customer of Gottlieb Daimler, who had driven the development of the first Mercedes of 1901.

On the Mercedes-Benz motor show stand in New York, the silver liveried prototype of the 190SL had been positioned between its big brother, the 300SL, and a Mercedes 180 Ponton, looking somewhat lost and inconspicuous. While the Gullwing had already made a name for itself in sports car racing in 1952, the 190's genes clearly stemmed from the modular construction kit of the much more leisurely three-box bodied sedans. It was not meant to be a thoroughbred sports car, but rather a sporty, elegant two-seater touring. The impression given by the 190SL alongside the bigger 300SL was neat, sporty and with dashing lines. This was the trait of Mercedes designers Karl Wilfret and Walter Hacket. The statistics tell their own tale as 25,881 units were produced in Sindelfingen between May 1955 and February 1963 - it was a success for Mercedes-Benz.

It was not until the Geneva Spring Motor Show in 1955 that the final production form was displayed. It was available as a roadster with soft top or in coupe form initially with a small rear window hard top (later changed to the elegant wrap round large rear window providing more rearward visibility). The soft top however did not get the same treatment and remained with the small window like the earlier hardtop. Either a roadster could be ordered with a hardtop or a coupe could be ordered with a soft top.

Its engine had four in-line cylinders with a chain driven overhead camshaft and two side draft Solex 44PHH carburetors, delivering a respectable 108 bhp for that era. The body was a monocoque design, welded to the shortened chassis of the type 180 saloon. A racing version with aluminium doors and a small windscreen was never produced although these parts could be ordered from the Factory for weekend racing. A number of discrete changes were made throughout the production run.



WHEELBASE7' 10 1/2"

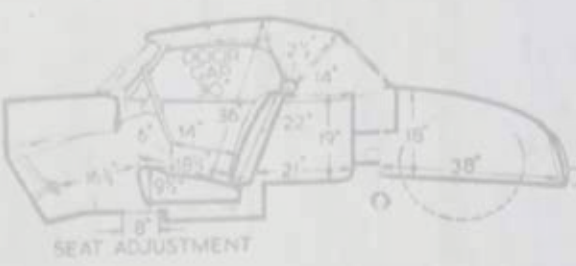
FRONT TRACK4' 8 1/2"

REAR TRACK4' 9 1/2"

OVERALL LENGTH13' 10 1/2"

OVERALL WIDTH5' 8 1/2"

OVERALL HEIGHT4' 4"



SEAT ADJUSTMENT

PRICE: £1,930, including heater, with roadster body, £1,930.
British purchase tax, £966 7s.
Total (in Great Britain), £1,896 7s.


ENGINE: Capacity: 1,897 c.c. (115.74 cu in.)
Number of cylinders: 4
Bore and stroke: 4 1/8 x 5 3/8 in. (3.35 x 3.30 in.)
Valve gear: single overhead camshaft.
Compression ratio: 8.5 to 1
B.H.P. 120 (gross) at 5,700 r.p.m. B.H.P. per ton (laden 97)
Torque: 107 lb ft at 2,800 r.p.m.
M.P.H. per 1,000 r.p.m. on top gear, 18.4.

WEIGHT (with 5 gals fuel): 2,145 cwt (2,425 lb).
Weight distribution (per cent): F, 51; R, 49
Laden as tested: 2,412 cwt (2,761 lb).
Lb per cwt (laden): 1.40.

BRAKES: Type: hydraulic, with A.T.E. vacuum servo.
Drum dimensions: F, 9.05 in diameter; 2.56 in wide.
R, 9.05 in diameter.

VEHICLE DATA
1 Fahrzeug-Daten
2 Bitte bei Ersatzteilbestellung Fahrgestell-Nr. angeben (Pos. 5)

18 Aufbau-Nr. SUPERSTRUCTURE BODY WORK 00043	MODEL DESIGNATION 121040-20	Auftrags-Nr. COMMISSION NR 95371133	10 Lackierung PAINT 534	OT	Text. 1. creme L 2, DT H3/G3 Boucle creme L 2	17 Ausstattung UPHOLSTERY
Sonderwünsche 10125/10177, 10266/10306, 55 320/3	6 Getriebe TRANSMISSION 018371	11 Motor-Nr. 121921-20-018248	12 Vorderachse li. FRONT AXLE LEFT 18370	13 Räder WHEELS 5Kx13Südr.	19 Vorderachse ra. FRONT AXLE RIGHT 18568	20 Bereifung 5fach TYRES FIVE 6,4x13Dunlop
5 Fahrgestell-Nr. 121040-20-018176	7 Hinterachse REAR AXLE 011138	14 Lenkungsschloß STEERING LOCK W 9146	15 Scheinwerfer HEADLIGHTS Bosch	21 Tür- und Tankschloß A 066	22 Scheibenwischer Avog	WINDSHIELD WIPERS
8 Lenkung DB STEERING GEAR 17210	9 Batterie BATTERY Bosch	16 Koffer- und Handschuhkastenschloß KSR 120	TRUNK & GLOVE COMP. LOCK	3 Bei den Wagen- papieren aufbewahren KEEP WITH CAR PAPERS		
Übernahme TAKING OVER ACCEPTANCE	DB 600-50-13 50.000 S.T.					



MERCEDES-BENZ

190 SL

MAY 1960

4 Typ
190 SL COUPE

17 Ausstattung
UPHOLSTERY

3 Bei den
Wagen-
papieren
aufbewahren
KEEP WITH
CAR PAPERS

19 Vorderachse ra.
FRONT AXLE RIGHT
18568

20 Bereifung 5fach
TYRES FIVE
6,4x13Dunlop

21 Tür- und
Tankschloß
A 066

22 Scheibenwischer
Avog

WINDSHIELD
WIPERS

S

01 | BRIEF HISTORY

The great provenance of this 190SL begins in 1960. The first owner is believed to be Mrs E. Croft from Preston, who purchased the vehicle in its original colour scheme of Fire Engine Red (Feuerrot DB534) with cream leather interior from Thompson Doxey Ltd of Southport, Lancashire. It remained in her ownership for 10 years, during which time it covered approximately 42,000 miles.

In August 1970, after seeing the vehicle advertised in *Motor Sport* magazine for the princely sum of £795, ownership passed to Mr Ronald H. Johnson, a marine architect and avid motorist. However Mr Johnson, more significantly was the joint-founder of the Mercedes-Benz Register in 1948, and then latterly the British Mercedes-Benz Club in 1952. Intended to serve the interests of past and present owners of the time, it was the first such Mercedes-Benz club in the world, and owes its existence entirely to Mr Johnson's efforts and enthusiasm for the marque. The Club's monthly Gazette is still in print today with a healthy readership and following of Mercedes-Benz aficionados.

There was never a period in Johnson's life when he didn't own a Mercedes. His first was a 1930 38/250 SS, but this 190SL was unfortunately one of the last before his passing in 1973. After his death, ownership passed on to Joan (Johnson's daughter) and her husband John Mac.

It's next keeper was to become British male supermodel, David Gandy. Within days of David briefing Parry Chana to source a suitable 190SL as a basis for a high-level restoration, the perfect vehicle became available - Jon Mac advised he wished to sell. Under the care of Parry and the Lux Classics team, a complete body-off strip down restoration and refurbishment of the quite rare Webasto roof followed. With a re-paint in Anthracite Grey (DB172) and a re-trimmed mid-red leather interior, the 190SL was brought back to its former glory - in fact, to a condition better than when it left the factory in 1960. Under David's ownership it attracted many admiring glances and made an appearance on TV with Parry, as a featured restoration on the *Classic Car Show* - something which Mr Johnson would have been immensely proud of, no doubt.

After the Gandy ownership years, the vehicle returned to Lux Classics, who are now delighted to pass its care to a new keeper. Parry and the Lux Classics team wish him and the 190SL well on their journey together.

The following parts are removed during stripdown:

- Convertible top, interior trim and door glass including winder mechanism and locks
- Front windscreen and frame
- Steering and steering column, dash, gauges and switches, pedals and hand brake
- False floors and electrical looms
- Front grill, bumpers, chrome trim and light fittings
- Fuel tank and lines, brake lines and master cylinder
- Air filter and air plenum chamber, Solex carburetors, exhaust manifold and inlet manifold
- Engine ancillary components - heater units, radiator, battery, regulator and fuel filter
- Engine and transmission
- Steering box and remaining wiring loom in engine bay
- Front subframe
- Rear swing axle
- Pedal shaft assembly
- Propshaft

02 | STRIP AND INITIAL ASSESSMENT

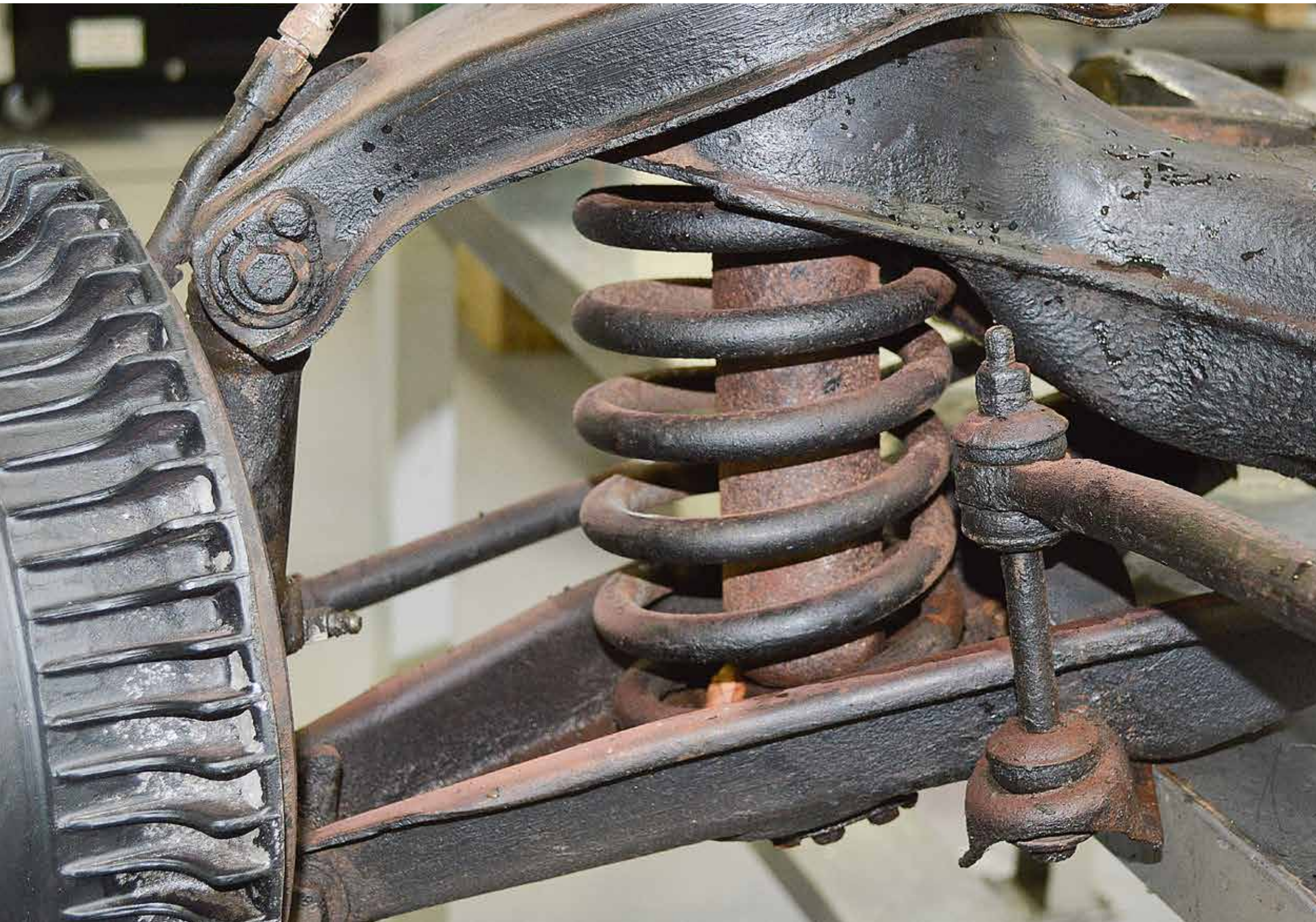
The 190SL is one of the earliest cars to be built in the 'monocoque' or 'unit body' design. With the exception of the rocker panels, which are screw on, the steel body panels, frame and floors are welded and nailed with special twist nails and held together to form a very strong single unit. The doors, bonnet and boot are aluminium together with the 'A' and 'B' posts and dash cowl and dash. The aluminium parts will generally not need to be replaced but all of the outer body panels are made of steel and may need to be repaired or replaced.

The first thing to do is to carefully evaluate the car for signs of wear and tear, serious or hidden damage, non originality, etc. As any issues arise, they are documented and photographed. At the same time research begins to determine what items were original to that particular model and year, what replacement parts are readily available, and what sorts of materials will be required.

All removed components are stored for later assessment. It is also worth noting that all screws, bolts, fasteners and clamps removed with these were retained and will be reused where usable. These will be later bead blasted and correctly plated. Reference to these processes and in aid of assembly we follow the Mercedes-Benz manual for standard parts or DIN book (Deutsches Institut fuer Normung), spare parts manual (Edition 'D' for this particular year) and the Mercedes Service manuals (Model 190 Passenger Cars and 190SL Supplement).

During the disassembly process, we note any irregular fits in the body panels or trim pieces. The stripped body is mounted onto a wheeled trolley and transferred to our body shop.





03 | CHASSIS AND BODY ASSESSMENT

The next and very important stage was to undertake a fully detailed and thorough assessment of the chassis (frame/floor assembly) structure. The U-section box reinforcements on the frame and side members received no primer or wax injection at Sindelfingen and generally rust from inside out. The shell was inspected internally with the aid of a Snap-on Video Inspection Scope™. Notes were made of any abnormal rust and chassis structures that need additional attention.

The chassis was then cleaned back to remove all of the residual oil, grease and general muck that had accumulated over the years. This was a filthy job, but vital if the soda blast of the structure that followed was to be fully effective in removing all of the surface rust.

Stripping the many layers of paint and body filler from the outer shell followed, revealing even the slightest old panel damage. The windshield 'A' pillars were then removed together with the side sill panels joining the 'A' post to 'B' post at lower door openings.

Corrosion spots are generally found around the wheel arches, headlamp bowls, sills, rear wing stone guard area, boot and floor panels caused by damp and the effects of electrolytic induced corrosion of the steel panels in the proximity of its aluminium supporting frames.

04 | CHASSIS RECONSTRUCTION

JIGGING

Following the stripping of the chassis, the first step taken in the reconstruction is to mount the chassis on a jig. Additional support to the frame was provided by the use of clamp struts in the door opening between the 'A' and 'B' post frames. This not only ensured that front and rear suspension alignment was always correct but also served to support the chassis during its reconstruction to avoid twist and sag.

Chassis measurements were compared to those in the Mercedes-Benz Data Book for Passenger Cars. It also provided a means whereby past damage could be detected and eliminated.

CHASSIS RECONSTRUCTION

The chassis reconstruction started with repairs to rusted sections which were cut, bead blasted, acid washed with repair panels fabricated and welded, keeping originality. The four seat box sections together with the four floor pans and two front lower firewall repair panels were cut out for replacement, de-rusting as we went along. The replacement floor pans are thicker than the original and zinc coated steel. The zinc coating creates a barrier against rust and can be painted over once prepared well. All chassis members were checked carefully by tapping with a pick hammer to ensure that they are not weak, especially the trailing arm supports which could become critical if they were to break loose. All new replacement Mercedes-Benz panels were either spot welded or plug welded in place before spraying with weld through primer. The lower firewall panel and chassis repair panel were butt welded and ground flat.

DIMENSIONAL CHECKING

On completion of the chassis reconstruction, another careful check was made to ensure that dimensional accuracy, particularly front and rear suspension mountings, sill alignment and 'A' and 'B' posts were still correct and that the alignment of doors, bonnet and boot was retained. In addition, a trial fit of the front and rear suspension was undertaken as a final check and to ensure easy assembly later.





RUST PROOFING AND PROTECTION

An extensive level of reconstruction was required, and every new section had to be shaped to fit and carefully welded into place. All box sections were carefully epoxy primed and zinc coated with weld through primer on the welding contact sections prior to assembly.

Once the reconstruction was completed, the finished chassis was again grit blasted, acid washed and then epoxy primed after which it received two sprayed coats of smooth anti-chip coating. Any joints were seam sealed with Polyurethane sealing compounds. A sealer coat of epoxy primer was followed with three coats of anthracite basecoat.

The inner boot floor, engine bay and inner floor sections were all sprayed with three coats of PPG Semi-Gloss black DB167 or RAL7167 (DB164 or DB167 Tiefdunkelgrau Matt). All internal sections were injected, providing a significantly enhanced level of corrosion protection and retained originality.





05 | BODY RECONSTRUCTION

CORROSION REMOVAL

Steel panels were stripped to bare metal by hand and finished off using a mini air hand sander with 3M™ 2" Roloc Bristle discs. No grit blasting was necessary as there was only surface rust that could be taken care of by hand and chemical de-rusting. Once any hammer work, and or lead loading was done, the cleaned panels were acid washed before a sealer coat of epoxy primer was applied preventing further rust due to moisture in the air.

Concurrent to this work the aluminium removable dash panel and glove box lid were chemically stripped and prepared with epoxy primer for later painting. The front wing splash panels were blasted of all paint and primer to their bare aluminium state, and sealed for later painting with semi-gloss black paint.

PANEL REPLACEMENT

Most outer panels were replaced with new Mercedes-Benz panels. Every spot weld, seen or unseen was done with the latest welding equipment and to the highest of original factory standards. Any additional body parts, like chrome mouldings were prefitted at this stage to ensure perfect fit and adjusted accordingly.



PANEL ASSEMBLY

With panels formed smooth by hand, the doors, bonnet and boot were mounted to check correct alignment. The front wing chassis struts were bolted on to ensure that the lower trailing edge matched with the door. The windshield frame was mounted so that the hard top fit could be checked. The dash panel was additionally checked for damage and assembled.

PREFIT, SHAPING AND GAPPING

Wear in the door hinges can cause the door to be out of alignment. A shortfall in maintenance means that the hinge pivot points on the 'A' post wear as the bush is made of brass and rubs against the harder steel hinge pin as it rotates. As expected the drivers door bushes required replacement. A special tool was fabricated to remove the old bush as space is restricted to drive these out with a pin punch.

The final stage of preparing the body for painting was to carry out a final shaping and prefit of the front windscreen chrome frames, bumpers, light fittings, door handles, front grill, rear wing stone guards, wing chrome eye brow mouldings, chrome sill mouldings and headlight glass chrome emblems. During the course of this stage the objective was to ensure a perfectly smooth shape so far as it was possible without use of filler. It was also to ensure that the gapping of the doors, bonnet and boot were perfect, all of the external bright trim, light fittings, front grille fit correctly, and gaps and apertures were adjusted as required.

Another aspect of this stage was to ensure that the aluminium surface was filed into a state that would allow the best possible adhesion of the epoxy primer in the initial stage of painting. The doors, bonnet and boot lid were then removed for later painting.





06 | PAINTING THE BODY

EPOXY PRIMING AND FINAL SHAPING

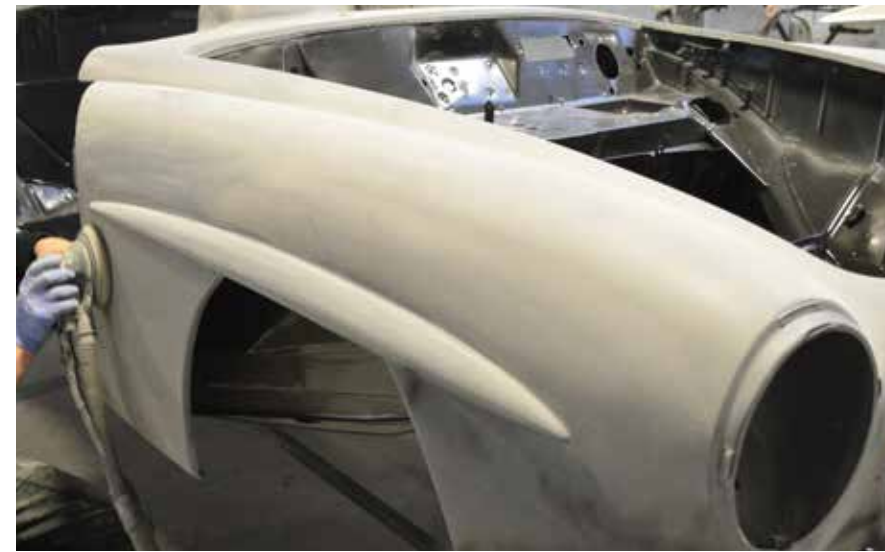
The first stage of painting was to epoxy prime the body shell. The objective of the epoxy primer is to provide an impermeable barrier to any moisture and to provide the best possible adhesion to the steel and aluminium surfaces and of subsequent primer coats.

This followed with the application of two coats of polyester primer filler followed by 3M™ dry guide coat with primer allowed to fully cure and harden. A long process of dry sanding followed to ensure that a perfectly smooth and flat surface was produced. A second round of sprayable polyester filler and blocking proceeded. Any final shaping of panels was then undertaken to ensure the best possible standard of finish and to ensure the barest minimum of filler was used. A small skim of filler was used where necessary to compensate for any minor deviation of the panel from the perfect shape.

The body shell was then given three coats of high build primer, followed by a light guide coat and this was allowed to fully harden. A long process of wet sanding followed to ensure a perfectly smooth and flat surface. This followed with two more rounds of high build primer and wet sanding in between each of the three coats with progressively finer sand paper. Only when an even guide coat finish was achieved and the surface perfectly smooth was the body shell sealed and passed as fit to move to the final painting stage.

The same process was used for the doors, bonnet, boot lid, and dash panel. Although the polyester spray filler was not coated on the edge and inner surfaces of these panels, but rather a wet-on-wet primer finish for smoothness. The final stage was to refit the doors and other opening panels and to make any final adjustment in the gapping, ensure that adequate clearance was provided and a perfect match of the front and rear body panels with the doors, boot lid and bonnet was achieved.





PAINTING

With the doors, bonnet and boot lid removed, the body was masked so that the weather strip channels and door jams could be sprayed. These were given three coats of base coat and three coats of clear lacquer. The edge of the doors too were given a similar coating to avoid dry spray when mounted. The doors, boot lid, bonnet and sills were all painted at the same time in Anthracite Grey DB172 to ensure perfect continuity of colour. The paint was then allowed to harden and rubbed down with basecoat sanding pads. Three further coats of base coat, followed by three coats of clear lacquer were applied and allowed to fully harden prior to wet sanding followed by three final coats of clear lacquer.

COLOUR SANDING AND POLISHING

The fully hardened lacquer coat was then lightly wet sanded using four grades of wet n dry paper to achieve a flat 'orange peel' free surface. The body had to be masked again fully to prevent the semi-gloss black from becoming marked. This process left the surface matt and the next three stages of compound and polish brought back the shine.

What we have achieved is a paint job that has depth and is flat as well. The secret is in the preparation work, priming and final shaping. This stage is where the time has been spent to create the base for the colour coats. The next and final stage was to fit and align the doors, bonnet and boot lid panels before the painted and polished shell was set aside for assembly.





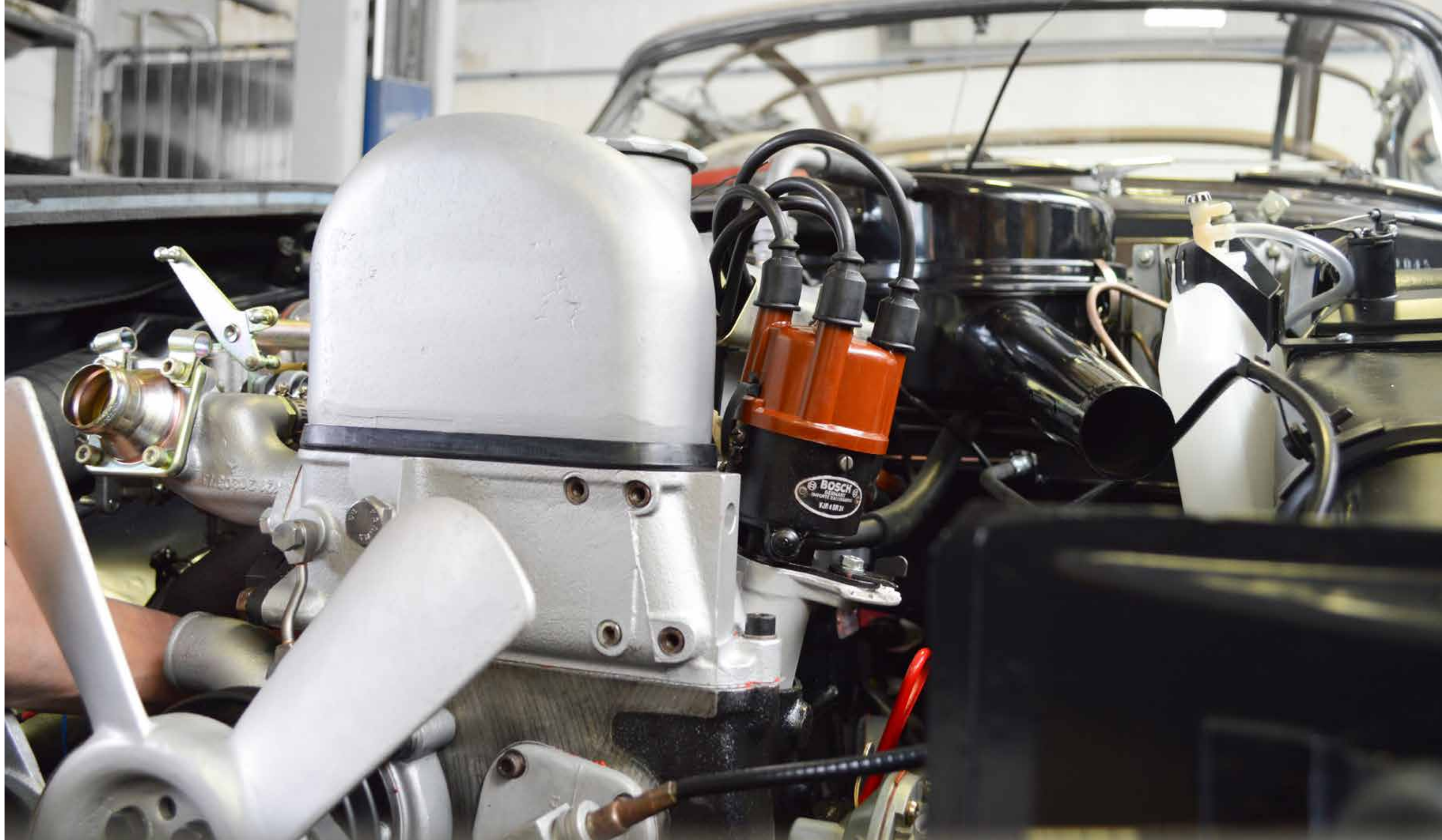
07 | ENGINE STRIP AND REBUILD

STRIP AND CLEAN

With the engine and gearbox now separated from the car, these were cleaned off and the engine was dismantled, with the first task being to remove all intake and exhaust manifolds, regulator, water pump, fan, fuel pump and distributor. This was followed by the separation of the bell housing and gearbox. The next operation was the removal of the cylinder head. The sump was then removed, followed by the removal of the timing chain and camshaft sprocket. The camshaft and camshaft followers were removed. The separation of the cylinder head followed, revealing for the first time the inner state of the cylinders and pistons.

The next stage was to remove pistons and connecting rods, followed by the crankshaft, oil pump and all of the external fittings. The freeze or core plugs in the cylinder block were removed and the block inspected and set aside for later use.

The crankshaft was carefully measured across all main bearing and connecting rod journals, and though a small amount of wear was noted, this was well within acceptable tolerances and therefore indicated that the crankshaft could be safely reground, polished and refitted with oversize bearing shells. The cylinder head was also dismantled at this stage. Waterways were flushed out and all external fittings were removed as a matter of course and set aside for later examination.



ENGINE BLOCK RESTORATION

The cylinder bore dimensions were checked against the Mercedes-Benz workshop data and compared with the wear on the pistons. Having assessed the block, it was fit to reuse, with the first stage of the restoration being to thoroughly flush out and ensure all waterway scale was removed.

The machining of the cylinder head and block was entrusted to an experienced machine shop. The cylinder head and block mating surfaces were lightly skimmed to ensure tight fit of the mating surface between the head gasket and block.

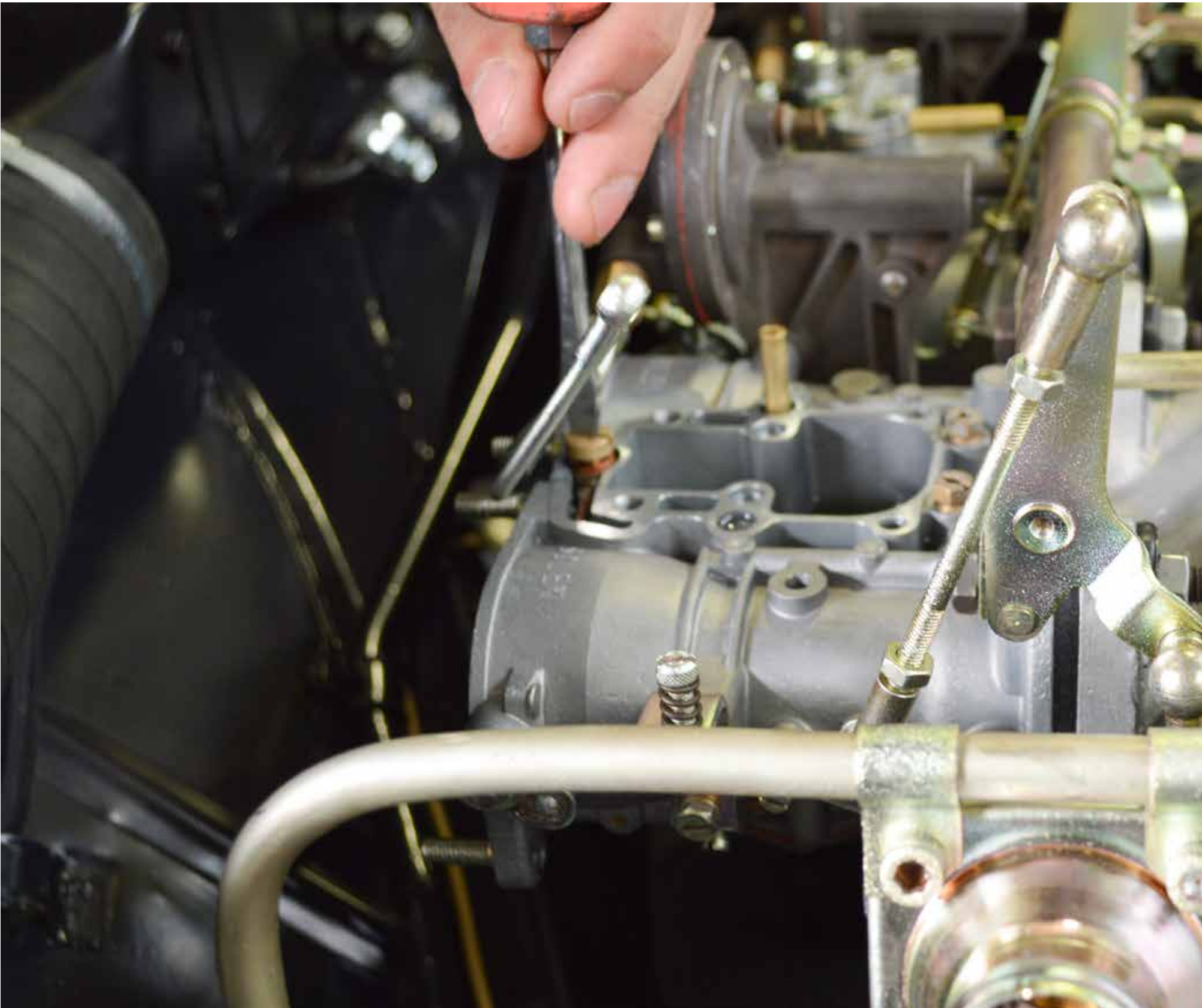
CYLINDER HEAD RESTORATION

As a matter of course all cylinder head valves, guides and valve seatings were removed for scrap. All waterways were then subject to a thorough alkaline wash to remove any water jacket lime scale and the casting checked for any incipient cracking, particularly across valve seatings. Once passed by the machine shop as serviceable the cylinder head facing was lightly machined to obtain a truly flat surface. New seatings were then pressed into position and machined to shape in accordance with the data in the Mercedes-Benz Technical Data Manual. Similarly, new phosphor bronze valve guides were carefully pressed into position, taking care to achieve the best possible seal. Valves were then inserted and bedded in. The cylinder head was then pressure tested to ensure no leaks were present.

Dependent on their condition, the camshaft bearing housings may be line bored, though in most cases this is not required. The camshaft was polished and within tolerances so was reused. Valve followers were then assembled and set aside for later assembly with the cylinder head. The cylinder head was then washed down and valves and valve springs etc, fitted as the final stage of preparing the cylinder head for final assembly.

ASSEMBLY

The first stage of the assembly process was to ensure the serviceability of the crankshaft, and journals ground to size as required and then polished. The crankshaft, flywheel, vibration damper, pulley, and clutch cover plate were then individually balanced and progressively balanced as a rotating assembly by the machine shop. The crankshaft was then assembled into the engine and the pistons and connecting rod assembly fitted. Other new components fitted included the oil pump, timing chains; exhaust manifolds (fabricated in stainless steel as new originals no-longer available) and gaskets. The engine was then reassembled using new washers and nuts throughout, setting the valve clearance and carefully timed for ignition and valve timing.



SOLEX 44 PHH CARBURETOR REBUILD

STRIP

The carburetors were initially chemically cleaned to assist in removing nuts and bolts. Dismantling involved removing every nut, bolt, bracket and screw attached to the carburetor bodies and checking for wear. In parallel the linkages, fuel pipes, fuel overflow pipes, hot start mechanism and throttle linkage to the carburetors were stripped. The fuel pump and fuel filter were dismantled as part of the carburetor rebuild. All parts that had been clear-Cadmium plated at the factory were sent to platers to be cleaned, de-rusted and 'Yellow Zinc Passivate Plated' as Cadmium plating is no longer available through environmental legislation.

PRECISION ENGINEERING

The stripped carburetor bodies were carefully checked for any cracks. The mating surfaces of the bodies were perfect with equal overall length of the two sets of bodies when placed on a measuring jig. The bores were checked to ensure that these were not distorted and free of the usual wear or grooves in the bores where the throttle plates close, indicating that the throttle plates could be re-used. This additionally indicated that the primary and secondary throttle shaft bores did not have excessive wear. As a matter of course the throttle shaft bores were bored out and new machined bushes were pressed in.

PLATING AND BODY FINISH

The carburetor bodies and all aluminium / brass parts (idle mixture screws etc) were chemically cleaned in an 'Ultrasonic Cleaning tank'. The Vacuum Secondary Chambers are made of aluminium and the correct finish is brown anodizing and the Throttle Linkage was originally a phosphate finish.

ASSEMBLY

With all parts cleaned the assembly was straight forward. New Mercedes-Benz gaskets, seals, fibre washers and diaphragms were used throughout. All linkages received new ball-ends and ball-caps. The throttle shaft carrier bushes were replaced and the new bushes reamed to the shafts.

BENCH TESTING

The carburetor settings were checked against those suggested in the 190SL Supplement Workshop Manual and set up on the bench and flow tested with vacuum and an airflow Synchrometer. The secondaries indicated that no air was passing and the primaries idle adjustment set to 5kg/h on each carburetor. Final set up is performed with the carburetors mounted on the engine and with the engine running.

08 | FINAL ASSEMBLY

FUEL, BRAKE LINES AND ELECTRICAL WIRING

The first steps in reassembling the car was to install the brake and fuel lines (excluding the fuel tank at this stage). Next the under dash and floor sound insulation material was installed after which the wiring loom was fitted from inside the cockpit to the front of the body and to rear.

UNDER BONNET ASSEMBLY

The next stage was to start assembly of all the components within the engine bay. First to go in was the fuse box and main battery wiring. Next the heater boxes and ventilation systems were installed. All components then attached to the under bonnet electrical systems. Bonnet latches, catches and rubber stops were installed. All installations were kept to ensure the highest possible standard of presentation as it would have appeared when the car left the Mercedes-Benz Zindelfingen factory in Germany when new.

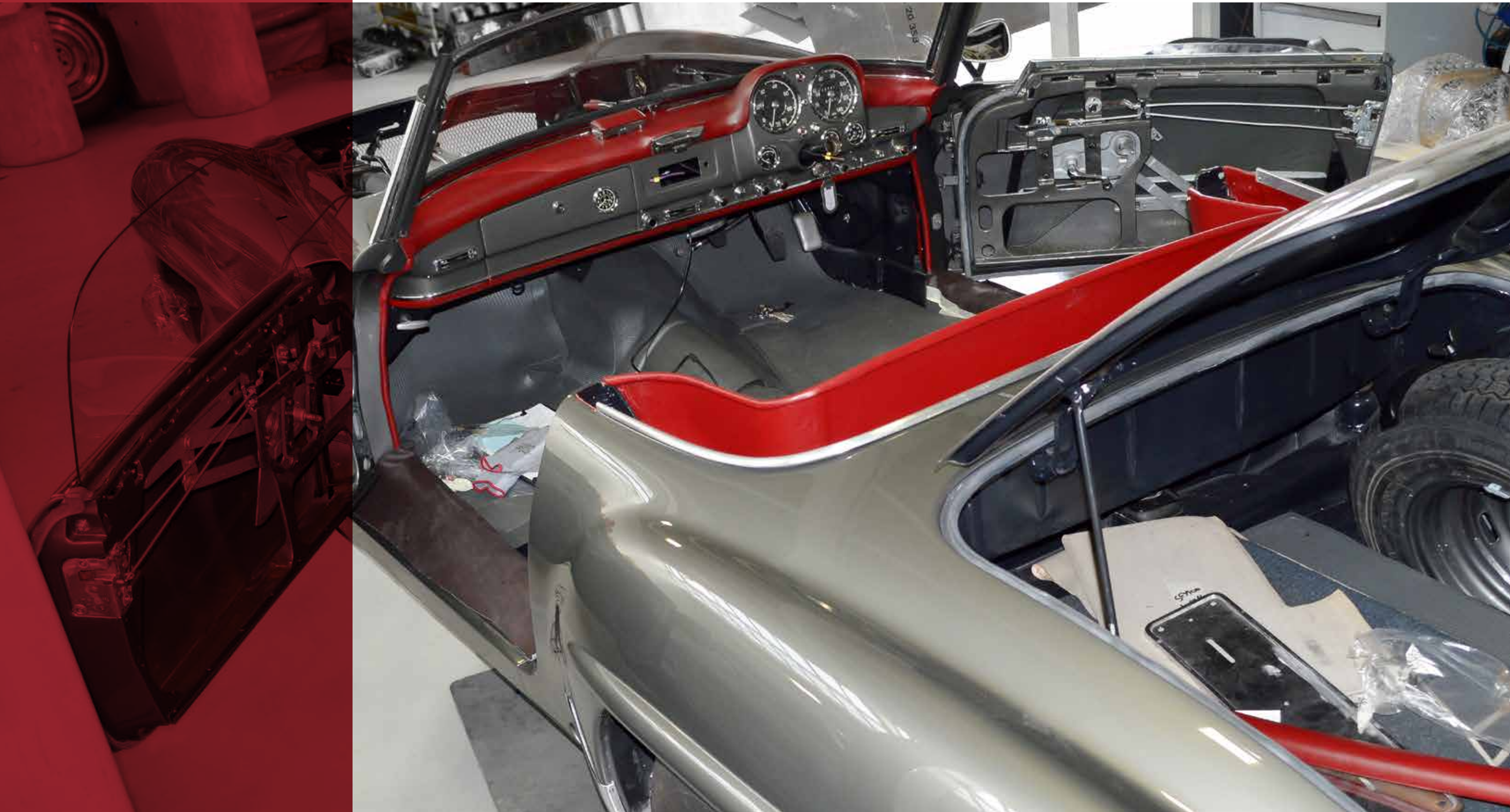
PEDAL ASSEMBLY, BRAKING SYSTEMS AND PROPSHAFT

At this stage the pedal assembly was completed from within and under the car. This allowed the brake master cylinder, reservoir and T50 booster assembly lines to be completed. The hand brake, arm and cable to the rear axle were feed and left in place. The Propshaft was temporarily placed within the enclosed transmission tunnel.

SUSPENSION, ENGINE AND GEARBOX INSTALLATION

With the engine and gearbox mated the complete unit was wheeled under the car on the front sub-frame assembly and fixed to the frame. The rear suspension/axle was fitted with springs and shock absorbers. Next the Propshaft was connected at the rear axle and gearbox and finally secured at the centre bearing. The clutch linkage was connected and the remaining wiring to the gearbox finished together with the rubber brake hoses to the wheel cylinders and the system filled and bled. The fuel tank was fitted together with the exhaust system.

Next the starter motor and dynamo were fitted after which the inlet manifold, exhaust manifold and Solex PHH 44 carburetors were fitted. Accelerator linkages, cold and hot start cables were connected and checked for function. The steering column was installed and connected to the steering box. The final stage was to complete other under bonnet installations like the radiator and hoses.







DOOR AND CHROME ASSEMBLY

The door top chrome strip was first to go on followed by the door latches and striker. The doors were built up with the window lifting and door opening mechanisms and the glass fitted. New door and boot rubbers were fitted. All chrome trim was re-plated and fitted carefully. This completed the remaining wiring on the head lights, tail lamps, indicator lights and number plate lights. Front and rear bumpers were fitted as well as a new chrome exhaust trim. The front grill, rear stone guard, sill / eye-brow mouldings and badges were fitted. Wiper motor, mechanism and linkages were rebuilt. Final assembly items like the wheels were attached and the car made ready for the interior trimming and soft top.





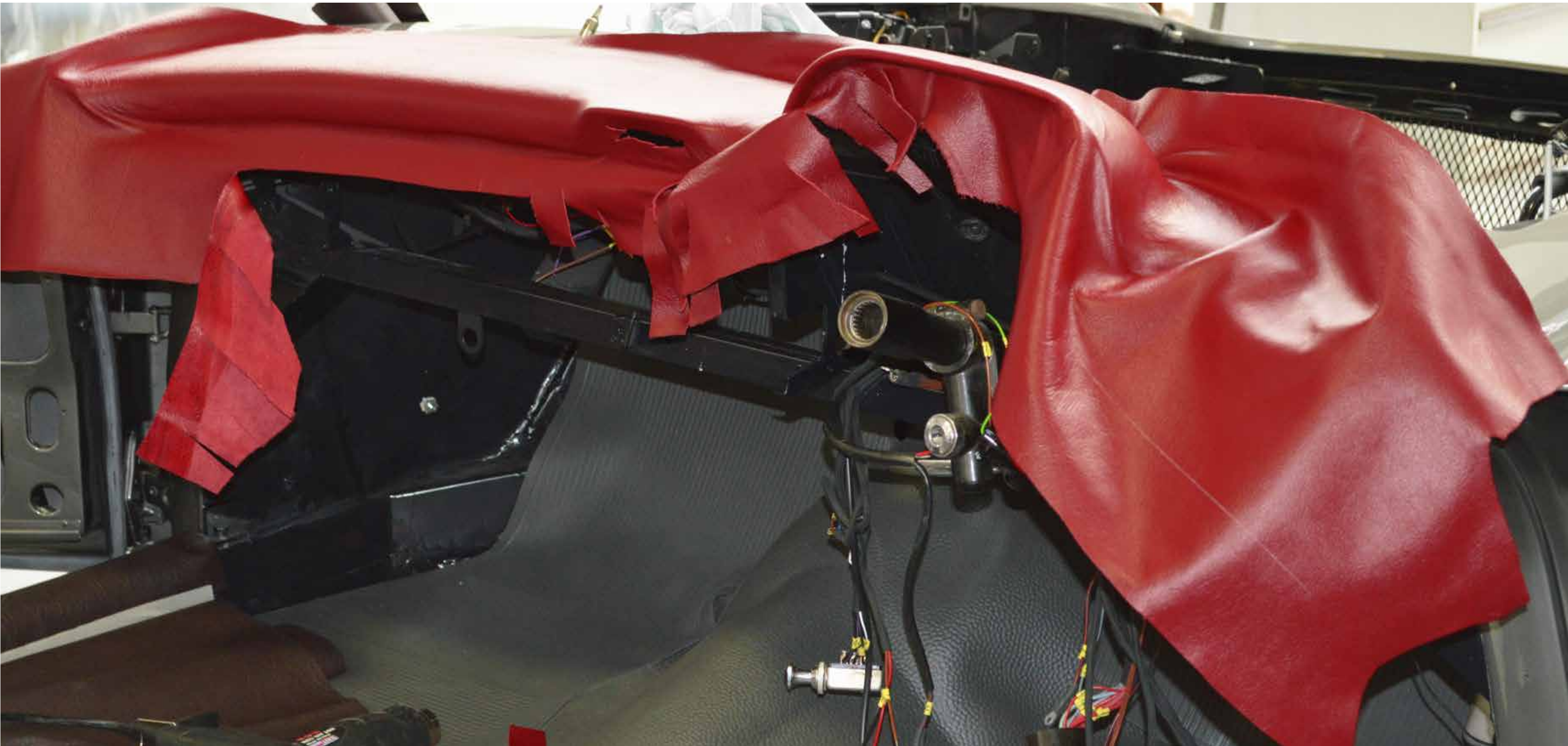
09 | TRIMMING THE VEHICLE

The foot washer pump was installed and the lower kick panels were made from hardboard, vinyl covered with material similar in texture and colour to the original and fixed with the correct fasteners.

The seats were assembled with re-chromed hardware and slotted into place on the plated runners. The ivory coloured steering wheel was assembled together with horn ring and final wiring completed at the steering column. Sun visors were made using steel frames and cardboard inserts as per original and were fastened with new chrome work.

INSULATION, CARPETING AND RUBBER MATS

The interior floor pans were insulated with Dynamax™ sounding deadening material as an improvement to the original material. This was then covered with 'waffle' type felt. Carpeting was then undertaken with German fine 'Boucle' square weave carpet material in the rear footwell and storage compartment. The front foot wells, centre tunnel, side sills and boot area was covered with rubber mats similar to when the car was new. The correct fasteners were used to hold the mats in place at the correct points.





LEATHER TRIMMING AND INSTRUMENT PANEL ASSEMBLY

Trimming the car requires not only patience but also passion for the detail and workmanship that makes the Mercedes-Benz 190SL what it is. Re-covering the dashboard with leather is the most challenging single task in restoring a 190SL interior. The dash was carefully covered with German fine grain supple light grey leather. As the leather was skived (thinned to half its thickness) it was possible to cover the contours of the dash. The dash is first fitted, stretched and shrunk around the instrument hump, then stretched to fit the rest of the dashboard.

Welting strips were made to fit around the instrument hump and door 'A' and 'B' posts. The rear soft top compartment was additionally covered with the same leather. The seats and door panels were made up, using traditional materials to fill the seats. Next the instrument panel was covered using felt under the leather at knee curves and instruments and switches fitted to the panel. The glove compartment was covered in leather and the glove box lid was trimmed. The windscreen pillars were fitted. The chrome vent strips and vent levers were fitted before the front windscreen and chrome surround was fitted and the dash trimmed to fit. The instrument panel was fitted as were the remaining switches and gauges. The interior wiring was completed together with final fit of dash chrome and glove box lid. The door panels will be fitted once the soft top has been trimmed and final window adjustments.



10 | TEST AND FINAL DETAILING

ROAD TEST AND SHAKEDOWN

It is our policy that once a restoration is complete the car is test driven for at least 500 miles to shakedown and reveal any defects and undertake final chassis adjustments and tuning. No major problems were reported. Final adjustments were made to the Solex carburetors with idle speed. Final geometry checks required tracking and wheel alignment adjustments. Finally the car was given a full MOT test which it passed with flying colours.

CLEANING AND FINAL DETAILING

The final stage of the restoration was to fit the chrome beauty rings and painted chrome hub caps on the wheels. A complete clean to concours standard was then undertaken including the under bonnet area, floor pans and wheel arches. The paint was polished and given a final coat of Autoglym™ High Definition Wax. Glass was carefully polished inside and out. The interior was fully vacuumed, new number plates fitted, handbook and all other manuals and instructions carefully checked and placed in the car. The spare wheel was carefully checked over, tyre pressures and all fluid levels checked and adjusted. New reproduction stickers were located to the correct place within the engine bay, windscreen and jack within the boot. The windscreen sticker particularly reminds the driver of the need for proper running in speeds.

Finally but by no means least, a Restoration Log Book has been prepared with a full photographic record of all aspects of the car restoration process, together with a final invoice and a full specification.





12 | SPECIFICATIONS

CAR DETAILS	
Model series:	Mercedes-Benz 190SL 1960
Model type:	W 121.040 Coupe
Chassis number:	121040-20-018176
Engine number:	121921-20-018248

ENGINE SPECIFICATION	
Engine type:	M 121 B II (M 121.921)
Bore and stroke:	85.0 mm x 83.6 mm
Displacement:	1,897 cc (four inline cast iron block)
Compression:	Ratio 8.8 : 1
Output:	105 hp at 5,700 / min
Torque	14.5 mkg at 3,200 / min
No. main bearings:	3
Valve / Camshaft:	SOHC Sports Duplex Chain
Induction system:	Twin Solex 44PHH Carburetors
Electrical system:	12 volt

TRANSMISSION	
Type:	4-speed manual fully synchronized
Gear ratios:	I. 3.52; II. 2.32; III. 1.52; IV. 1.0
Clutch type:	Single dry plate
Rear Axle type:	Hypoid single joint swing axle
Rear Axle ratio:	3.90 : 1

BRAKES	
Type:	Hydraulic drums, finned for cooling
	ATE T50 Vacuum Servo
Drum Diameter:	230 mm

CHASSIS AND BODY	
Frame:	Unit construction frame and body
Body style:	2 seater Convertible with removable hard top
Front suspension:	Independent, unequal length wishbones with coil springs and telescopic shock absorbers
Rear suspension:	Independent, single low pivot swing axle with coil springs and telescopic shock absorbers
Wheels:	5K x 13 Steel disc
Tyres:	6 40 13 Michelin period size on modern radials

BODY DIMENSIONS AND WEIGHTS	
Track width front:	1,430 mm
Track width rear:	1,480 mm
Wheelbase:	2,400 mm
Length:	4,220 mm
Width:	1,740 mm
Height:	1,320 mm
Curb weight:	1,160 kg / Coupe 1,180 kg
(Roadster)	(according to DIN 70020)
Gross vehicle weight:	1,400 kg

CAPACITIES	
Crankcase:	4.23 quarts
Cooling system:	2.6 gallons
Fuel tank:	65 litres

BODY SPECIFICATIONS (ORIGINAL)	
Paint:	Glasurit
Colour type:	Fire Engine Red (Feuerrot)
Colour code:	DB534
Leather colour:	Creme
Leather code:	1060
Carpet type:	Fine Boucle Square Weave

BODY SPECIFICATIONS (RESTORED)	
Paint:	Glasurit
Colour type:	Anthracite Grey Metallic
Colour code:	DB172
Leather colour:	Light Red
Leather code:	1079
Carpet colour:	Red
Carpet type:	Fine Boucle Square Weave

