

Ro 80

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Buyers Guide. **Thus you'll find a Ro 80** **meeting your requirements.**



The NSU Ro 80. Why you should buy one just now.

As an outstanding vehicle with real unique selling points. The Ro 80 even today is still a milestone in automotive history, and an avant-garde exception that attracts positive attention at car meetings and rallies. The timeless elegant body and the hugely dependable Wankel engine, go along with numerous detail solutions for the highest level of driving comfort, such as independent suspension, semi-automatic transmission and power steering.

The Ro 80 is also an investment with a high potential for appreciating in value. Currently you can still purchase inexpensive cars whose resale prices can be expected to be much higher in a few years time, partly due to the fact that there are only around 2000 vehicles left worldwide. We offer expert assistance with the purchase and competent contacts for sales or „succession planning“.



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Buying guide for the NSU Ro 80

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1. INTRODUCTION

1.1 CURRENT STATUS OF THE RO 80

Although this paper is intended as a technical buying guide for potential buyers, some basic remarks on the car itself are permitted.

Only very few cars are as shrouded in stories, legends and half-truths as the NSU Ro 80. Some of these stories I shall attempt to put into their true light.

An important historical fact about the Ro 80 is that there was no predecessor and no successor. This enabled the designers to free themselves from any traditions or conventions. The initial idea for the car was for NSU to use the carrier vehicle as a demonstration to the Wankel license-holders that rotary engines were suitable for the larger vehicle category. The designers were told, therefore, to create a 'type 80', based on the magic number 8: costing 8000 DM, weighing 800 kg and with a consumption of 8l/100 km. Unfortunately, they weren't quite successful and the actual measurements ended up closer to approx. 1300 kg weight, a cost of 14,500 DM and a slightly higher consumption, but the development time was significantly shorter than the norm then and now, and the number of designers was a lot lower.

The design was very advanced, as a whole and in many details, which enabled the model to be produced for almost 10 years without significant changes to the design. The construction was very robust, this and the necessary complicated tools caused the manufacturing to be very expensive, which explained the high price. Over 10 years of production only about 37,500 vehicles were made, which meant that large changes to NSU (or Audi NSU) weren't worthwhile as the production figures of certain components would have sunk even lower.

This is good for modern buyers as most of the individual parts of the different years of design are compatible, especially the bodywork. A Ro 80 is repairable with spare parts of almost every other Ro 80.

The Ro 80 can be considered a trendsetter in the 60s/70s; the wedge shape, created by designer Claus Luthe, which shaped Audi body construction for over 20 years, was practically anticipated by the Ro 80 creators. Glass surfaces like the Ro 80's, which offer an excellent all-round view, have since been removed from production due to tighter (overly tight?) safety measures. The Ro 80 chassis and brake technology is significantly more modern than that of many other cars from the same era, and the Wankel engine captivates still with its vibrationless running and typical sound. Many are constantly impressed with the automotive refinement the Ro 80 has to offer.

Finally, a reminder that whilst the NSU Ro 80 can be used for everyday purposes, as was initially intended, we have become spoiled nowadays by the complete lack of problems with modern cars. Even then, predominant city traffic led to occasional difficulties, and the fuel consumption is another thing entirely.

1.2 MARKET SITUATION

The Ro 80's market situation is relaxed, the market is calm. A comment from a market observer: "People who want a Ro have one, and newcomers are reserved, as they are sceptical of the rotary engine, which is incorrectly assumed to be difficult." This despite the fact that the Ro 80 offers a great deal of value for the money it costs compared to contemporary family cars.

The cars in very good condition are mostly in the hands of people unlikely to part with them; there are, however, a lot of reasonably good cars available for moderate prices. Some owners do have steep overestimates of the worth of their 'outstanding cars'. Even for vehicles in especially good condition, the price often doesn't compare to the amount paid for comparable classic cars. It is worth mentioning here that the prices of very good cars and of cars in condition 2-3 are unusually far apart in comparison to other models.

Cars fit for scrapping (and parts recovery) can be found for low prices, sometimes free.

Our guide does not contain concrete prices; deliberately, as to name prices without specific knowledge of the individual vehicles would be ridiculous. Prices can differ regionally and of course a driveable vehicle will cost more than a barn find in questionable condition and with unknown history. The **Classic Data** lists are very useful as a starting point for price orientation; several classic car magazines regularly publish abbreviated copies (see www.classic-data.de or www.oldtimer-info.de).

This buying guide concerns itself strictly with the technical side of purchasing. When in doubt, bring an expert from the Club or a professional restorer along to the examination (which should always contain a check on the lift or inspection pit). An expert from the Club is easily contacted via the regional get-togethers.

For more information on the regional get-togethers, go to www.ro80club.org/termine-treffen/stammtisch.

2. GENERAL BUYING TIPS

The more you know about the Ro 80, the more likely you are to spot weak points in a potential purchase as you will know where to look. More knowledge also helps greatly with price negotiations, as you will be able to bring up better arguments. Well-based arguments ("this will cost this much to fix, so I want this much knocked off of the price") will get you further than attempting to force the price lower using "it's just too expensive for me" and the like.

The books mentioned under point 7 (literature) will be a great help in learning more about the Ro 80.

The seller's attempts to big up the car and previous restoration projects on it are also easier seen through with closer knowledge of the car. Always bring a second person with you who is not personally interested in the sale; besides the fact that two pairs of eyes see more than one,

they can also be a voice of reason if you begin seeing everything through rose-tinted glasses.

Observe the seller. Does he seem trustworthy? Why is he selling?

3. THE SEARCH AND PRESELECTION

3.1 WHERE TO BUY A RO 80

PRIVATE SALE. If your local newspaper has a large section for car advertisements, it will also have a category for classic cars. If not, buy some of the classic car magazines (in Germany: Motor Klassik, Oldtimer-Markt, Oldtimer-Praxis or one of the many classic car advert newsletters) and study their advertisements. Car websites like www.mobile.de also contain Ro 80s on occasion. Of course, our Wankel Journal has a section for buying and selling Ro 80s, but the majority of our offers are under the sales section of our homepages, www.ro80club.org and www.nsu80.ch.

COMMERCIAL SALE. If you prefer to rely upon a dealer or a garage, find out who is specialized to suit the Ro 80 and what reputation they have. This information is most easily discovered in a club. If the dealer doesn't have your car available, perhaps they can ask around more specifically. Their garage can then ensure the repairs are done professionally and take care of the technical acceptance. This may offer fewer feelings of success than the do it yourself approach, but is certainly safer as the company then is responsible legally for ensuring the car functions properly – which is also reflected in the price, however. A buyer with no previous experience or knowledge should seriously consider this course of action.

3.2 PRESELECTING ADVICE

Advertisements and information from businesses give a good first impression of the selection and the prices. Don't allow yourself to be too impressed by the description of the condition however as they are often overly optimistic and the prices wishful thinking. Photos are also often too 'flattering'. If a vehicle catches your interest, phoning the seller and asking him pointed questions is always a good idea. Make a list to go through with them; specific year of construction, chassis number, history (prior owners, how long has the seller owned it). Check if the car is driveable and permitted to drive on roads, and ask for the date of the next MOT. Don't be satisfied with vague descriptions of the condition like a 'good 2' (which often turns out to be a 3); ask about the engine, suspension and bodywork (welds and accidental damage), and the critical points you should be aware of after studying the books recommended and talking to the club members. Ask after previous restoration work and who it was done by; this all should help you separate the wheat from the chaff, if the owner of the 'best and most beautiful car in the whole country' seems less than enthusiastic about your questioning. Doing all this

over the telephone can spare you a trip. Once you have a sufficient shortlist, plan the inspection. If you're lucky, the seller will drive to you; it'll prove that the car can make the journey. Normally, however, you will have to drive yourself to see it.

3.3 INSPECTION

Crucial tools to bring with you to your inspection are:

- A strong flashlight, even in daylight as rust and other problems are often in dark corners.
- An overall, so that you can lie underneath the car.
- Several cleaning cloths, to make sure you can inspect dirty spots and open the tricky fittings where you can check the oil and water's quantity and quality (you should know what they should look like and what various discolourations indicate).
- Jump lead or a charged battery in case the seller claims the engine normally starts perfectly if only the battery wasn't down.

Don't forget all of your notes so far, and an empty sales contract (car club, book shop) and your credit card or cash, in case you decide you want to buy the car then and there.

The tips above apply for buying practically any classic car, or second-hand cars in general. But now for the specific information on Ro 80.

4. INSPECTING A RO 80

4.1 IDENTIFYING FEATURES

The chassis number can be found under the bonnet on the right suspension strut dome (on the crossmember to the right of the bulkhead for all models before 1970).

The German vehicle registration documents have a field on page 4 for manufacturer's notes, where various mechanical codings can be entered.

For the meaning of these numbers used since the year of construction 1972, see the copy of a registration document (replaced nowadays with the registration certificate part II) and the explanatory table on page 13.

These numbers can only be found in the original documents. They weren't included in the replacement documents sent out after a long period of inactivity or when the first was full or unusable for other reasons. The original document is usually retracted, but can just be declared invalid by special request of the owner. At any rate, a conscientious driver will have a copy of the original papers.

The modern registration certificate part II contains substantially less information.

Using the chassis number, the club can discover most of this information (and other as well, e.g. the date of production), using the original NSU book of production.

4.2 WHICH YEAR OF CONSTRUCTION?

Over the years, only little was changed on the appearance of the Ro 80. The continual changes on the engine are also not always apparent. An expert can recognize each different year of construction, however, and can always tell when a car has been repaired with parts from other years of construction. Although the more modern types were more popular for a long time, these days the earlier models appear to be in greater demand; especially in original condition.

From 1969 onwards the car was sold as the Audi NSU Ro 80. The following list contains the most important changes throughout the various model years (some modifications were introduced later in certain export countries, several different dates for Switzerland are annotated):

- 1967:** first version with four plug engine (two spark plugs per rotor), engine compartment painted black, light grey or black canopy, door sills without anodised side panels, door panels with smooth contour, two-coloured B-pillar cover.
- 1968:** engine compartment colour of vehicle, door panels without contour, anodized side panels on door sills.
- 1969:** plastic radiator fan instead of aluminium, auxiliary halogen headlamps behind radiator grille.
- 1970:** single plug engine (one spark plug per rotor), high voltage capacitive ignition (HKZ = Hochspannungs-Kondensator-Zündung), wind screen wipers with intermittend action, halogen main and auxiliary headlights with flat diffusers, plastic radiator grille, dashboard indicator lights and buttons with symbols.
- 1971:** chassis number on the suspension strut dome instead of crossmember.
- 1972:** blower and exhaust reactor for post-combustion, single pipe exhaust, downdraught carburettor with automatic choke and different air-inlet housing (CH: from 74 on), HKZ ignition unit on metal plate in engine compartment, electric r.p.m. gauge (CH: from 74 on), r.p.m. warning buzzer, front suspension spider out of aluminium alloy instead of cast iron.
- 1973:** brake discs with spacing elements and accordingly adjusted drive shafts, Audi seats without height adjustment.
- 1974:** coolant expansion tank out of plastic, r.p.m. gauge and speedometer with larger numbers, generator with integrated voltage regulator, improved automatic choke.
- 1976:** new rotor oil seals, enlarged rear lights with integrated rear fog light, rear number plate above instead of below bumper, rubber profiles on bumpers,

car boot lock moved to lid, new straight Ro 80 symbol on rear.

- 1977:** oil injection circuit with non-return valve, strengthened gearbox for intended power increase from chassis no. 0871 000 334 (from gearbox no. 38 348).

These are only the most important changes introduced at the beginning of each model year (autumn of the previous year). The Ro 80 Club International has a more detailed list of the changes for people who are interested. The entries in the book by D. Korp (see chapter 7) are sadly not always comprehensive and correct.

The most important special equipment/extras for the car are:

- Fuchs brand alloy wheels.
- Manual or automatic steel sunroof.
- Tinted glass all around.
- Head rests and seatbelts on the back seats as well.

4.3 INSPECTING THE BODYWORK

The NSU Ro 80's bodywork is altogether pretty stable and torsionally rigid, judging by, amongst other things, the amount of retrofitted convertibles which have seemingly no issues with stability. Even a car with heavy rust usually won't become warped. Even if you lift one corner with a car jack or place a wheel on the kerb and all doors and bonnets can be opened with no problems, that is no proof that the car is fine. There's no way around a thorough inspection of the Ro 80.

Generally, the Ro 80 is as likely to rust as most cars from the 60s and 70s. Information as to which years are more likely to rust is unreliable, as a general rule however the years 1974-1975 (steel crisis, copper-containing recycled metal) are worse than the years before and after. Existing cavity preservation is usually useful and potentially more important than a certain year of construction.

The deciding factor for the price is in every case the condition of the bodywork. Repairs on the bodywork are the most expensive and are often difficult to calculate. An 'honest' car with three rust spots is better than one that has been welded many times and could have hidden faults. The condition of the mechanics should be secondary, as it is all repairable for far cheaper prices.

You should investigate the rust and any previous repairs undertaken on load-bearing parts (lift or pit). Below we have listed all possible weak points ever discovered on a Ro 80. Obviously, there isn't a car where all of these parts are in bad condition, but we prefer to list all of our knowledge – the less the object of investigation proves to have, the better. It is easier to gain an overview if you know all possible faults. By the way, this approach is applied by all vintage car clubs and technical journals.

After that introduction, our list of possible critical points (see pictures 1-5):

- **(1)* - (4)*** front longitudinal beams.
Examine the entire length. Watch out for the areas at the stabilizer supports (1), the arches under the drive shafts (2) including the water run-offs (3) and the rear ends under the car floor (4). The water run-offs (3) were plugged for no apparent reason in model year 1975!
- **(5) - (7)** front fairing.
The curves between the fog lamps and the wheel arches (5), the corners of the rectangular section and the welded radiator support profile (7) are susceptible to corrosion. Reproduction sheet metal or a plastic fairing can be used to fix this.
- **(8) - (9)** shock absorber housings, front (8) and rear (9) are in danger of corrosion due to multi-layer sheet steel.
- **(10)** air intake vent with built-in wind screen wiper drive mechanism.
- **(11) - (13)** sills
Sill undersides (11) and (12), adjacent base plates (13), front and ends sill ends, jacking points.
- **(14) - (15)** wheel arches front (14) and rear (15).
The plate between the front wheels and the A-pillars needs a gap on the underside for the water from the sunroof and engine bay. This vent is often missing or blocked with underseal.
- The bodyfloor above the exhaust silencer **(16)** is checked easiest by removing the rear seats and the floor underlay.
- **(17) - (20)** doors
The lower edges of the doors rust in the middle of the factory-applied lower black section (17) and inside the tight lower part (18), where dirt and water accumulates if the vent is sealed with underseal or plugged; a gap (20) on the upper edges of the door on a spot-welded seam is hidden by the window well trim. An insulation mat is stuck to the inside of the door, which attracts and absorbs water. The doors were only lacquered after the mat was glued on!
- **(21)*** area surrounding the sunroof where the sunroof frame is spot-welded.
- **(22) - (23)** car boot
the car boot floor near the wheel housings (22) and the double floor (23).
- **(24)** exhaust mounting bracket
Exhaust brackets under the car boot (24).

Point marked with * are especially critical defects and it depends on the remaining condition of the car whether it is worth repairing or only usable for spare parts.

The **front longitudinal beams** are for example no longer available and larger welding jobs are difficult. The precision required for restoration work is very high, as the front axle geometry is determined by the mounting points of the front wishbone to the beams. The axle itself is only adjustable within limits, excluding at the toe in.

Rust in the area of the **sunroof**, recognizable by the blisters of rust on the roof membrane, is also very complicated to restore; often the roof of a spare part donator is the only solution.

Leakage problems on the **windscreen and rear window** can show themselves by rust blisters underneath the aluminium trim of the window seals. A macerated, mildewed, warped parcel shelf or one with a black film detached from the underlay is a clear indication of a leaking rear window. Signs of rust above the front footwell ventilation nozzles are indicative of a leaking windscreen. If the windscreen or rear window has not been watertight for a while then the window frames of the bodywork will be rusted through in almost every case. Corrosion in the **car boot** (including spare wheel well and rear wheel arches) are often due to a leaking rear window. The rear panel and the side struts between the wheel housing and the bumper brackets should also be examined in the car boot as they can be damaged in accidents.

The front **base plates** are often bent up as the triangulation point there (reference points for the straightening jig) were mistakenly taken for jacking points.

The **sill** consists of a three part closed box section and merges into the car floor on the lower side. The weak points are well-hidden: hidden below due to PVC underseal, inside due to the carpeting and outside and above due to the anodised exterior trim. Even so, the sill is checkable.

Shining a light into the vents by the back door can give some insight as to the condition of the sill cavities. Removing the side enclosure panel and shining a light through the resulting opening allows for a better view (picture 1, point 25). To remove the side panel one must unscrew the aluminium enclosure panel above and lift them slightly. This method only works with the models from 1970 onwards as the earlier vehicles didn't have this opening. You can also remove the carpeting inside the sill and the plastic lid underneath it, for newer models the ventilation rosette (be careful, the fastening pins break off easily). The only way to really see into the front of the sill as well (area of the front jacking point (27)!) is with an endoscope. Caution is advised for applying the original car jack to the original jacking points as this could damage a still functioning sill beyond repair.

Whether buying a car with a bad inner sill and/or bad floor pan is a good idea or not depends on how much you are prepared to invest in the restoration. The inner sill and the central divider can be made in sections using a metal folder, however several requirements of the MOT must be taken into account. The central divider of the sill is very difficult to mend from the outside. The outer sill (no longer available anywhere) is pretty hard to build from scratch. Repair sheets for the front mudguards are available at the clubs; used rear mudguards are still available. The Swiss club offers repair sheets for rear wheel arches.

Good **doors** are difficult to find (and often expensive!); often you can replace the rusted metal in sections. Car boot lids and bonnets are usually easier to find in good or easily repairable condition.

When restoring the whole bodywork, you should correct several weak points designed into the car and in any case install correct cavity conservation. The clubs have advice ready for this.

Some **windcreens** show air penetration on the sides (between the laminated safety glasses). This doesn't look good and shouldn't be there. These windcreens can in most cases still be used for years until they are rejected by the technical acceptance test.

The windscreen of the Ro 80 is curved on two axes, the vertical and the horizontal. Replacement screens often aren't curved on the horizontal axis. The window mustn't be straight when viewed from the side. At the top, the curvature of the original windscreen fits perfectly with the line of the roof.

A windscreen not fitting these requirements is not just a cosmetic issue as the unbent screens are far more difficult to render watertight.

Windcreens with colour gradients look particularly good on the Ro 80, they were however only available ex factory in Scandinavian countries. Colour gradient and completely coloured windcreens are available at the club as true to the original replacements.

A last word on the **paint**. The NSU Ro 80 was painted in many different colours over the years, some nice to look at, others created in the spirit of the times and take some getting used to. While it is possible to paint the car whatever colour you choose during the restoration, you should at least choose a colour available for that particular year. Repainting the car requires a lot of time and effort if you don't want the original colour to be discoverable afterwards. The way to discover the original colour of a car is by checking the dashboard support, as this is also painted and the paint is visible through the windscreen and the ventilation grilles. Otherwise, the painted panel near the type plate where the colour code is shown is also very useful. The decoding can be found in the spare part catalogue (see chapter 7, "literature").

4.4 INSPECTING THE ENGINE

To begin, a few general technical checks:

Check if the engine, gearbox and brakes (including compensator) are leaking. A correctly maintained Ro is never too oily. Watch out for the oiltightness of the gaiters by the drive shafts as well.

You need to know certain things about the Wankel engine to estimate a potential purchase properly.

All in all, the Wankel engine technology seems very conflicting to a newcomer. Over the years, many ignorant people have spread rumours and half-truths about the engine, leading to its unjustified infamy for being unreliable; on the other hand, many Wankel engines nowadays run over 100,000 km without any problems. The availability and cost of spare parts also varies strongly, so that some parts are surprisingly easily obtained while others are almost rarities. It must be mentioned however that no car

belonging to a club member has ever been mothballed for long due to missing replacement parts.

The condition of the trochoids and the side plates and also the sealing elements 'apex seal' and 'side seals', which are responsible for the compression, are critical.

The condition of the engine can be fairly reliably, but sadly not conclusively/comprehensively assessed using a compression diagram, recorded with a special compression tester for Wankel engines. The diagram has 6 readings (two rotors with three compartments each). Good engines have a peak pressure of over 7 bar in every compartment. The values of the individual compartments shouldn't differ from each other by more than 0.5 bar. An expert can tell by the differences in the three compression values in one rotor which type of deterioration is involved: side seal, apex seal or trochoidal surface.

Pay attention to the engine's idle rpm, which should be at 1200 ± 100 U/min when the engine is warm. If the idle speed is much higher, it's likely that the idle speed was raised to conceal a bad engine, as it could stop when starting up or during one of the following tests.

A few easy quick tests with a warm engine and correct idle speed give a first impression:

Stall speed

Hit the brakes, shift to first gear, apply full throttle. If the engine doesn't reach a speed of 2000 to 2200 U/min, the engine is bad. If it reaches noticeably higher speeds, the clutch is slipping. Don't conduct this test too often and only briefly so as not to damage the mechanics.

Clutch effect

Observe the idle speed while free-wheeling. This should lay at 1200 ± 100 U/min. Select a gear while the car is braked and release the gearstick. The rpm should only drop by about 250-300 U/min.

Test by steering

Stop car with foot brake, idle speed should lie at 1200 ± 100 U/min, shift to first gear. Release the gear stick and fully turn right or left without opening the throttle and hold it under tension. The engine shouldn't die.

Normally the engine should start with the following simple procedure according to the operating manual:

Engines with downdraught carburettors with automatic choke (cold):

- Ignition key to 'Fahrt' (drive).
- Slowly depress accelerator pedal all the way and release.
- Start without accelerating.
- Warm engines start best at half acceleration (don't pump!).

Engines with horizontal draught carburettors with manual choke (cold):

- Pull choke out all the way.
- Start without touching the accelerator pedal.
- Push choke back about $\frac{3}{4}$.
- Depending on driven distance, push choke back further; it should be completely pushed back after 1 km.
- Don't use the choke if the engine is warm, the engine will flood instantly!
- When it gets warmer in summer, the choke is barely needed even during a cold start, at most shortly whilst starting.

After a long time without being used, starting the engine can take a while. Investigating the cause is a good idea; after a long period of disuse, it is sensible to clean the breaker point using a piece of paper. Blue exhaust fumes (burnt oil) appear if there are worn oil seals, should disappear after a short time. Some sellers hide this by letting the engine run a while before the viewing.

Ask the seller what oil the car was filled with. Fully synthetic oil, if used for a long time, can make the blue fumes almost completely 'disappear'. This will look very different when the car is then filled with mineral oil!

The ancillary engine components are not very crucial and usually conventional models, like the ones known from piston engines.

If any of these break, replacements are available for normal prices either new or in good condition. The only expensive parts are the spark plugs, but you only need two of them (old versions: 4).

4.5 CHASSIS, BRAKES

The wishbones of the front and rear suspensions can be seriously corroded if the water drainage holes are blocked (knocking test).

The front and rear shock absorber housings (point 8 and 9 in pictures 1 and 2) are also in danger. While the front ones are easily viewable when the bonnet is opened, the rear housings are only accessible after removing the parcel shelf and all boot linings, and from below from the wheel arches.

After a long period of standing, the brakes (especially the rear brakes) can be stiff or otherwise non-functioning. Repairing them is basically possible. The necessary parts are (with the exception of the rear axle braking force limiter) still available at a specialised brake service. The braking force limiter can be overhauled.

4.6 INTERIOR

The seat covers can, especially if the car doesn't have coloured glass, become very faded and fragile. Watch out

for the upper edge of the backrests, especially the rear seats. Dark colours in particular are in danger here. Bad quality seat fabrics are more of a problem than a worn seat underconstruction; this can be repaired. Original upholstery fabric can't be found any more; for some patterns, the Ro 80 Club International has replacement fabric. Plastic (faux leather) seats are usually in better condition, but not everyone likes them as they get very warm in summer.

Door linings and floor carpets are usually not hard to find (and are acquirable in reasonable condition). Look for the cause for any traces of rust on the linings (see chapter 4.3.).

Dashboards are sometimes brittle due to too much sunlight, occasionally (very rarely) even ripped.

4.7 TEST DRIVE

Listen carefully for any **noises**. As the running noise of the Wankel engine is very quiet and doesn't dramatically increase even when running with high rpm, all other noises are easily discernable.

Cracking when turning can come from the **drive shafts** or the upper **struts** (the latter can be heard when steering without moving).

The **oil pressure indicator** should go out as soon as the engine reaches more than the idle speed.

The **engine coolant** temperature should always remain in the 'thin white area' of the thermometer while in normal driving mode. The 'thick white area' should only be reached in warm weather during prolonged slopes or when towing a trailer. The red thermometer area should never be reached.

4.8 FURTHER RECOMMENDATIONS

A Ro 80 that has a **piston engine** instead of a Wankel engine (Ford V4, Audi), should be left alone unless the rest of the car is in such good condition that restoring it to a Wankel engine is worthwhile.

Watch for **completeness** and **originality**, a glass lifting roof, for example, is never the original! All parts of the interior equipment and all trims and emblems should be present. Headlamps (front and rear) are still easy to come by, sometimes even new.

There are many good quality stainless replacements available for the **exhaust**, with almost identical sounds to the original. Earlier (English) replacements are of differing quality and often have a slightly different (thinner, lightly tinny dragging) sound to the originals. Try to find a perfect exhaust reactor, as there are no functioning reproductions to date, only a Y-branch pipe as a replacement!

Engines are, although the Ro 80 was infamous for years due to its engine problems, not that important. Repairable engines from scrapped cars are occasionally available for the material price (naturally with no guarantee, it could also be scrap). Overhauled engines are available at

commercial Ro workshops for 2 to 3 thousand Euros; new or original replacement engines are offered occasionally and are noticeably more expensive. Experts can overhaul practically any engine with new parts nowadays.

Gearboxes with gear shift problems are often due to an incorrect setting of the clutch servo control. This is easily fixed. You should replace a permanently squealing gearbox with one from a scrapped car (and hope that it's better than the other), a reliable repair is expensive.

REMEMBER:

Buying an expensive car in good condition is often worth more than a cheap buy with lots to restore – unless you can (and want to) restore it yourself. Also, bodywork repairs are often more expensive (and harder to calculate) than repairs to the mechanics.

How much one is prepared to accept (and to pay for) more modern attachments (radio, steering wheel etc.), depends on how much you are striving for originality. Many fans prefer modernisations that are reversible, rather than unalterable interferences.

Several other weak points like the window lift mechanisms, wheel bearings and cardan collar seals are annoying, but not substantial. If the cardan shafts are driven with broken seals for a long time, long-term damage is possible (watch for grease residue in the bearing spiders or recently repaired seals! The same goes for the coverage of the steering rack in the front left wheel housing.) Window lifters are easy to repair with replacement parts. Cardan collar seals are available at VAG as repair parts. Wheel bearing assemblies are available at the club.

5. NUMBER OF VEHICLES BUILT

Cars built from 1967 to 1977: 37,402

The number of Ro 80s registered with KBA Flensburg with normal registration sinks every year. In 2014, there were:

NSU (1967 to 69): 53 vehicles

Audi NSU (1969 to 77): 683 vehicles

These numbers are misleading however, as they only include cars with normal registration – not those with a red 07 number or a classic-car license plate. The number of these cars and withdrawn vehicles amount to approx. 1000.

The estimated amount of Ro 80s worldwide is 3,000 to 3,500.

Curious fact worth a mention: There are two cars with the authenticated years of construction 1979 and 1997 (built by club members from bodyshells)!

6. TAXES AND INSURANCE

The Ro 80 is taxed in Germany due to its weight, as the creators and the authorities couldn't agree on a fair way to calculate the Wankel 'piston' displacement (then the basis for road tax in Germany) back in the day.

The road tax for the Ro 80 in Germany is 101€ per year.

For this reason, a normal registration (possibly with seasonal license plate number) is cheaper than an H license plate. A registration with H license can be sensible when a trip to an area with environmental restrictions is imminent.

As all Ro 80 are now over 30 years old, acquiring a cheap old-timer insurance should pose no problem.

7. LITERATURE

The Ro 80 Club International offers the following literature, which can be very useful for maintenance and restoring your Ro 80:

- Ersatzteilkatalog Ro 80
(*Ro 80 Spare Parts Catalogue*)
- Reparaturhandbuch Ro 80
(*Ro 80 Repair Handbook*)
- Reparaturhandbuch Ergänzungen
(*Repair Handbook Supplements*)
- Wartung- und Diagnosehandbuch Ro 80
(*Ro 80 Maintenance and Diagnostic Manual*)
- Karosserieinstandsetzung Ro 80
(*Ro 80 Bodywork Repair*)
- Ro-Tipps, 1001 Tipps und Tricks zu Restaurierung und Reparatur, Pflege und Unterhalt sowie Betrieb des NSU Ro 80 (*Ro Tips, '1001 Tips and Tricks' for Restoration and Repair, Care and Maintenance as well as the Daily Operation of the NSU Ro 80.*)

For the complete current list of literature and prices, see our website

www.ro80club.org/clubservice/clubshop.

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The available literature contains a lot of other useful information beside the main information:

The **spare parts catalogue** contains lots of "exploded views" and overviews of the paint and upholstery colours for the individual years of construction, as well as the factory issued special equipment.

The book **Ro Tips** contains a list of alternative parts from other cars and reproduction parts available from the clubs.

Used **owner's manuals** are often sold.

Many other **NSU documents** like pictures of the ignition system, the fuel and cooling systems and lubrication plans are available in a club member's archive.

The standard work on the Ro 80 is the book by Dieter Korp: **NSU Ro 80, the history of the Wankel engine.**

It is only available second-hand.

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and

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Assembly and editing: C. v. Klösterlein

English translation: Elena McComb

For correspondence and other information about the clubs, please visit our websites:

www.ro80club.org

www.nsu80.ch

Members of the Ro 80 Club International and the NSU Ro 80 Club Switzerland helped creating this buying guide. The publishers are much obliged to them. Tips on how to improve this buying guide are always welcome.

All information in this buying guide is written to the best of our knowledge and capabilities. We can, however, not guarantee comprehensiveness and perfect flawlessness.

We ask you to regard the given information as guidelines to supplement your own expertise and care.

last update: Sept 14th 2015

8. CHECKLIST FOR BUYING A RO 80

	Item 1	Item 2	Item 3	Item 4
Ro 80 year of construction				
Chassis No.				
Vehicle km				
Engine km				
Colour (ideally:colour code)				
Alloy wheels (yes/no)				
Sunroof (yes/no)				
Coloured glass (yes/no)				
Trailer coupling (yes/no)				
Other extras				
Installed new parts				
What parts are welded?				
General condition				
MOT (month/year)				
Driveable (yes/no)				
Licensed (yes/no)				
Other comments				
Selling price (fixed or negotiable)				
Findings during viewing				

9. PRINT FROM PAGE 4 OF A GERMAN “KRAFTFAHRZEUGBRIEF”

Notes from the manufacturer	00431	080012	W7W734	row 1
184 560 671				row 2
		014444	3797	row 3
<i>left</i>		<i>middle</i>	<i>right</i>	

Explanations for the table above

Row	Number group	Meaning	Example	Notes	Explanation of the example
1	left	Final inspection in the factory	431		-
1	middle	Model of the vehicle and the engine	80012		-
1	right	Bodywork colour (2x!) upholstery colour	W7 34	(1) (2)	Atlantic-metallic Marine blue
2		Extra equipment, see spare parts catalogue, general part p. IV	184 560 671		Automatic seatbelts Sunroof, manual Tinted windows, green
3	middle	Receipt number	014 444		-
3	right	Delivering dealer	3797		(0923 is an in-plant delivery, if delivered to another country the abbreviation is mentioned e.g. CH, NL)

- (1) This isn't the colour number on the sticker in the car boot lid of the original cars, but the sales number. The categorisation can be found in the spare parts catalogue, general part, p. V to XXVII.
- (2) 50s and 60s numbers are faux leather furnishings, 70s are real leather.

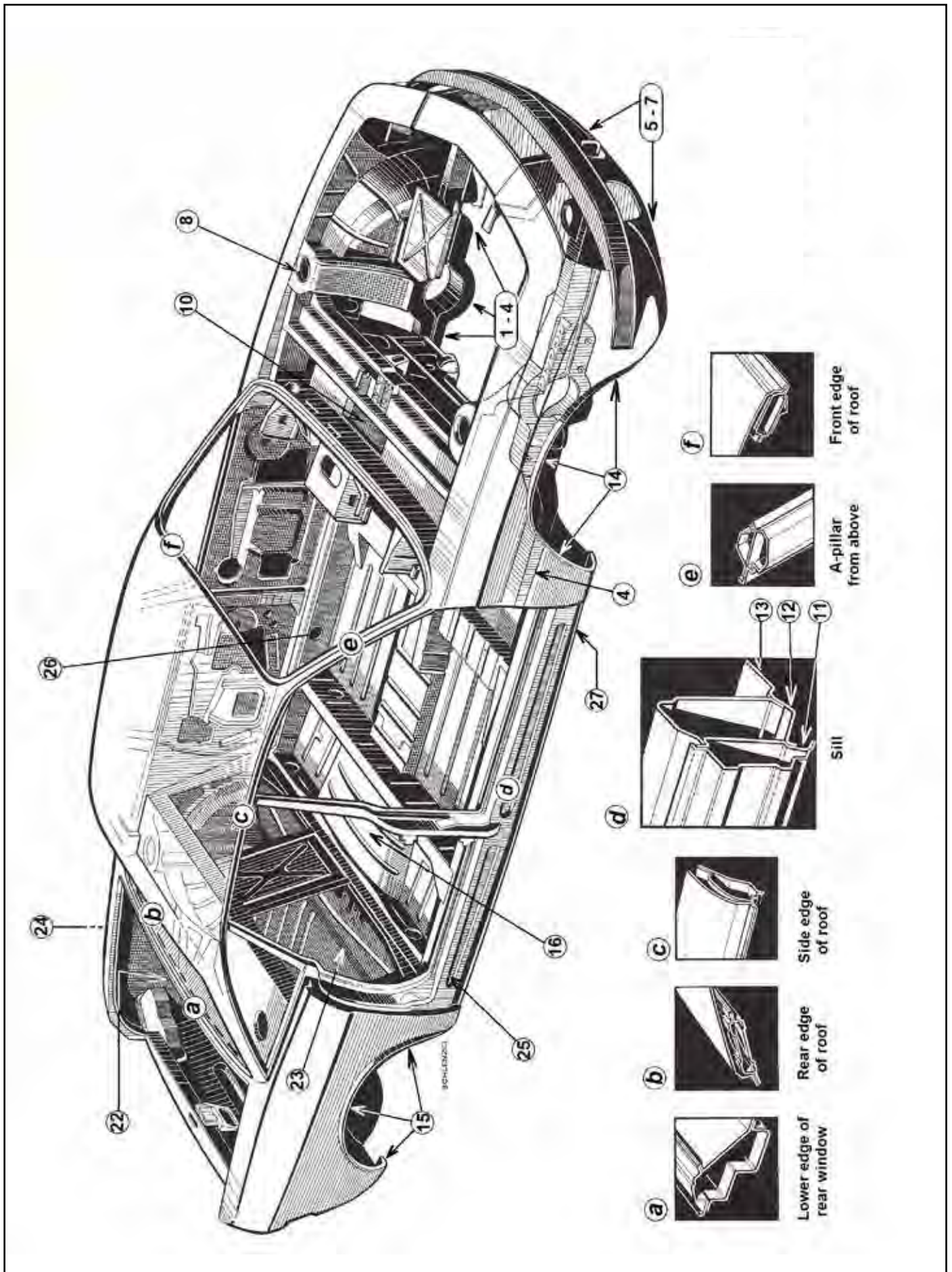
10. ILLUSTRATIONS

Picture No.	Item	Points to note
1	Bodyshell with cross sections of the profiles a-f	1 - 16 and 22 - 26
2	Front end	1 - 4
3	Fairing	5 - 7
4	Doors	17 - 20
5	Sunroof, area of corrosion	21

Source of the Illustrations:

NSU folder “Wankel development” and working position book Ro 80, both from the NSU archive.

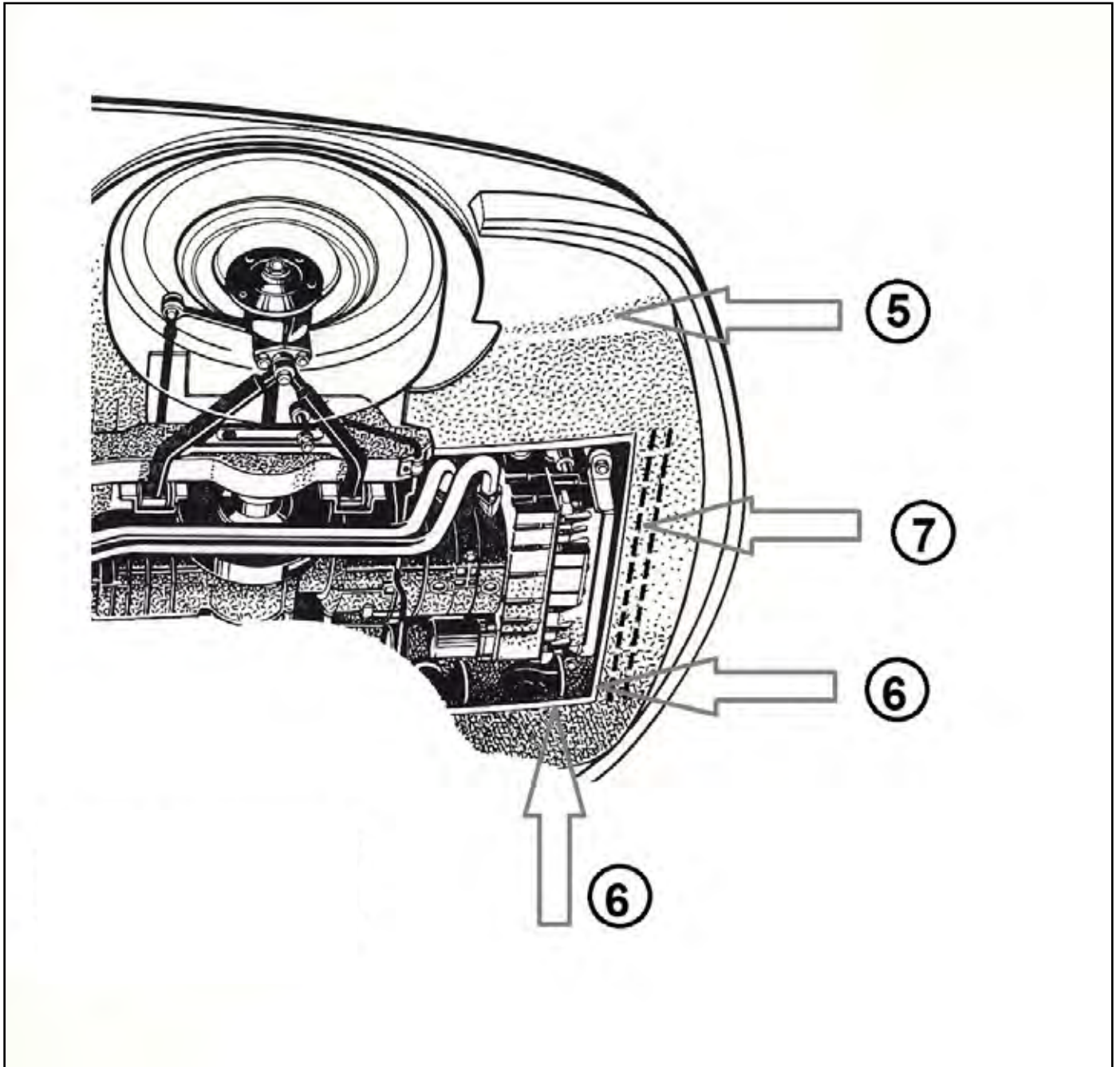
10.1 PICTURE NO. 1



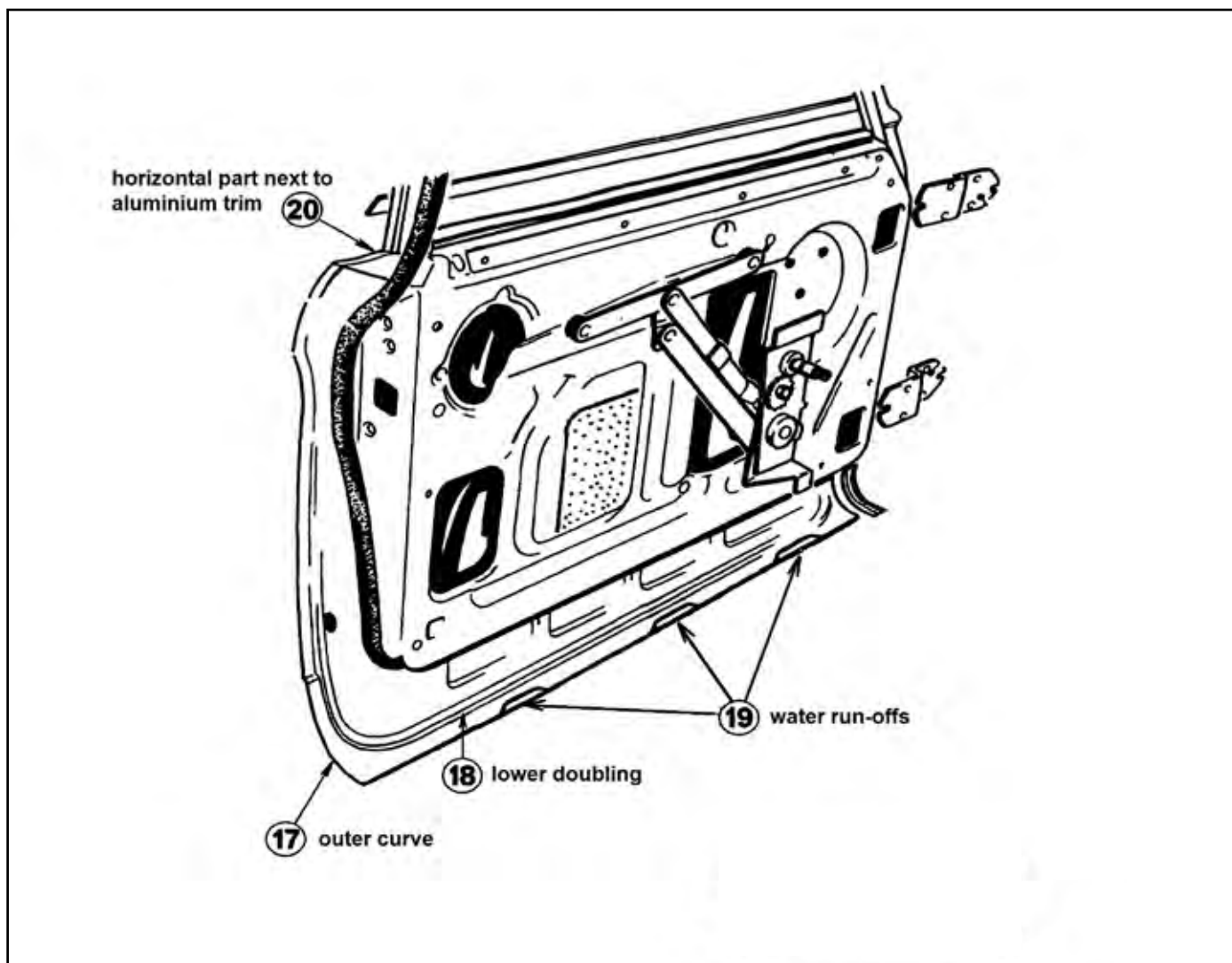
10.2 PICTURE NO. 2



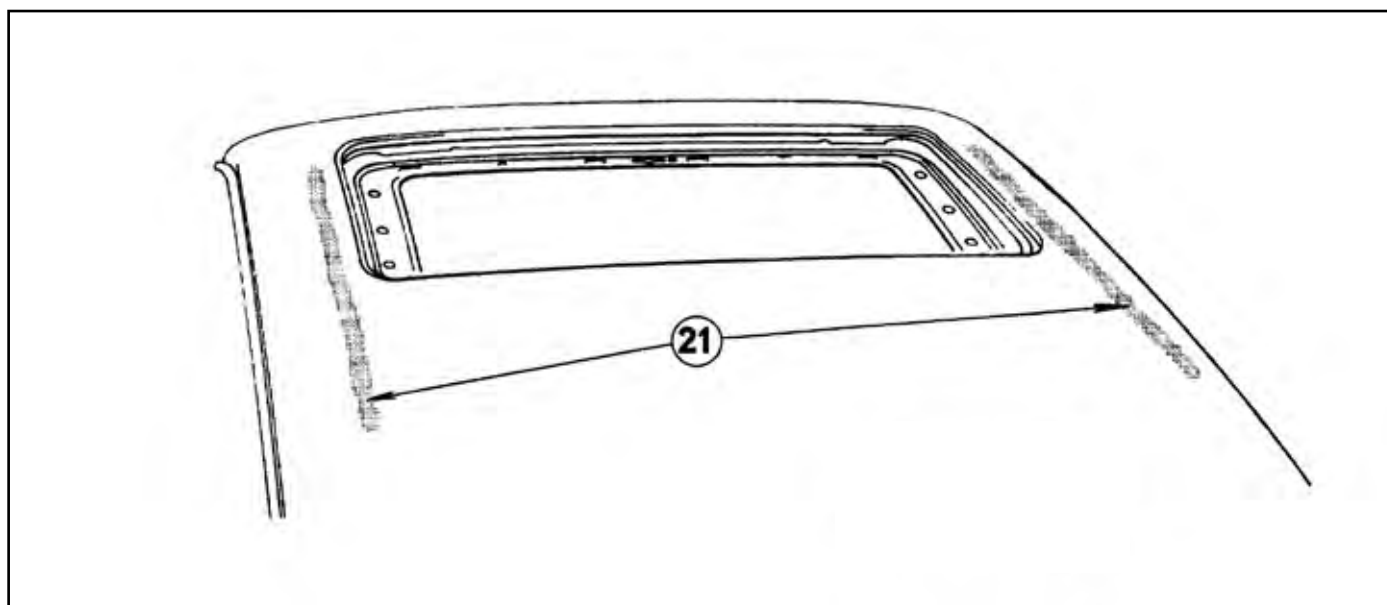
10.3 PICTURE NO. 3



10.4 PICTURE NO. 4



10.5 PICTURE NO. 6



11. PRESS REVIEWS OF THE NSU RO 80, THEN AND NOW

This front-wheel-drive car is the most highly sophisticated best designed, both mechanically and aesthetically, model ever to be placed before the public.

The Sunday Times 1967

The Ro 80 sets new standards in terms of steering, road holding, quietness at high speeds and its unusual but attractive appearance.

Jury report 'Car of the year 1967'

The mechanical and aerodynamic peace at high speeds is unbeatable by any other car.

BBC 'Top Gear' 1996

The Wankel Journal is a magazine made with love which contains a lot of insider information and useful tips.

Motor Klassik 1997

The whole car is modern, racy and aerodynamically outstanding (cw of 0.355), far ahead of its time in this aspect as well.

auto retro 1999

Vision of a future without conventional piston engines.

Thoroughbred & Classic Cars, March 2000



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