

Tech Tid Bit

By Herman Farrer

As seen in Healey High Roads publication of the Capital Area AHC

Do you have one of those nice original shop manuals or even a reproduction in a loose leaf binder? The books are invaluable when trying to repair your cars. Unfortunately, no matter how many times you read a section prior to performing the work, you have to refer back to it shortly after your hands become impregnated with grease. Also, if your manual is original like mine, there are too many pages for the size of the binder. Since it was printed in Britain using a smaller size paper than our 8½" x 11" and punched for a four-ring binder, I was stymied on how to protect it while working on the car.

What's the solution? Go to your nearest office supply discount store and purchase several boxes of page protectors and a large (2"-3") three-ring binder. The page protectors are clear plastic sleeves into which you can place a single sheet of paper.

Once done your only worry will be understanding the obtuse instructions in the manual. You better reach for that parts book to double check. And by the way, get a few extra boxes of page protectors for it too.

1957 thru 1967

By Roger Moment
Rocky Mountain AHC

Colorado Red, Florida Green, Old English White (OEW), Healey Blue and Black – these are colors that owners of six-cylinder Austin-Healeys have come to know well. Primrose, Pacific Green and Golden Beige Metallic – three less common colors that also were standard offerings during specific periods of Healey production.

Many publications, including the Concours Guidelines (put out by the Austin-Healey Concours Committee), have listed paint and trim color combinations. However, examining the sources for this information introduces a host of interesting details that tell us even more about when the various colors were actually offered. By this I mean “standard” offerings – ones that customers were given to choose from when buying their new car. We also know that many Austin-Healeys were painted at the factory in non-standard colors – some as customer special orders and some for display at special car shows.

There are three sources for color information to draw from: Color-chip booklets and folders, sales literature about the Healey models, and factory blueprint sheets that list the paint and trim variations available for a given model.

Color-chip books and other literature almost always have a publication number printed in the bottom right corner of the back cover. However, they rarely show the date when they were printed. The blueprints all carry dates, although they can be difficult to read because of the reduced size of the available copies. I have tried to use these sources to assemble a picture of how color offerings changed from 1957-1967.

The first series of color charts appear as booklets, about 3” by 4”, with covers in an orange-yellow with red printing. They are stapled at the left edge and consist of separate sheets for each color. They are in a series, all with the publication number 1531, but having various letter suffixes:

1. 1531 100-6
2. 1531A “3000”

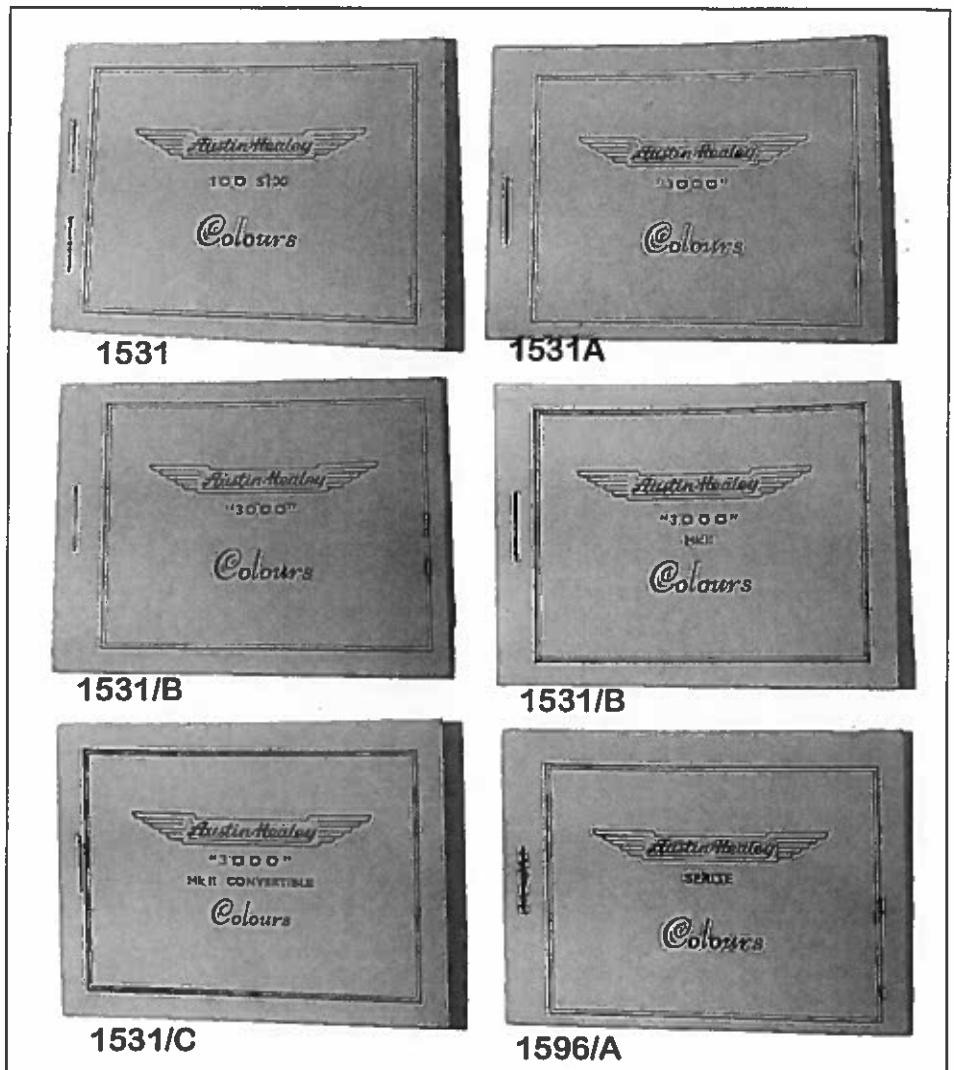
3. 1531/B “3000”
4. 1531/B “3000” Mk II
5. 1531/C “3000” MII Convertible

Booklet 1531 for the 100-6 includes the following colors: Healey Blue, Black, Florida Green, Colorado Red, Ivory White, Primrose and Pacific Green. The difference between the 1531A and 1531/B booklets for the “3000” is that 1531A contains the same colors as for the 100-6, while 1531/B does not include Primrose or Pacific Green. Booklet 1531/B for the “3000” Mk II has the same colors as 1531/B for the “3000.” The only difference between these two booklets is the addition of Mk II to the cover of the sec-

ond one and the addition of BMC color codes to the color names that are printed on the back side of each sheet. Other than the addition of “Convertible” to the title on the cover, 1531/C is identical to 1531/B for the “3000” Mk II.

So far so good, but what more does all this tell us? For starters, there are two different listings/booklets of colors for the 3000 (Mk I as we commonly now refer to it), one with Primrose and Pacific Green and one without these. Aha! These two colors were apparently *not* standard offerings throughout Mk I production.

So how can we figure out when Primrose and Pacific Green were dropped?



Shown are the 1531 series of color chip books for the big Healeys and 1596/A for the Sprite.

There are two additional sales brochures that can help. Both were printed in the United States but carry official BMC markings. The first is publication #1124-E/BW, and it carries the additional markings of 300M-9/59. This is a two-sided sheet in black and white on the "3000, fabulous successor to the 100-6," and contains a paragraph listing all paint and trim color combinations. Among them are both Primrose and Pacific Green. It was printed in September 1959.

The second, publication #1124-E/C, also marked with 300M-2/60, is a 4-page folder printed in color on "The New Austin-Healey '3000' - The Sports Car of Sportsmen." It was printed in February 1960, and also contains a paragraph on color offerings. However, neither Primrose nor

Pacific Green is listed. Finally, publication # 1124-E/BW, also marked 400-2/60 and printed in February 1960, does not include either Primrose or Pacific Green.

From this we might conclude that these two colors were dropped part way through 3000 Mk I production. We cannot tell, however, just when the last Primrose or Pacific Green cars were made, and in fact, there is documentation that Pacific Green was used on Mk IIs from the factory.

So let's move on to another finding. It has been common knowledge that British Racing Green (BRG) was not a standard color offering until the BJ7 or Mk II Convertibles. A few cars were produced at the factory in BRG (we're not yet talking shades of BRG, however) prior to that and they have been documented. One was

the last 3000 Mk I, chassis HBT7 13750 (a RHD car) and others were the BN7s raced at Sebring. In fact, we know of two BRG shades - a lighter one containing more yellow (GN-25) and a darker one (GN-29).

Here's what the color chip literature tells us. Our sources are:

1. Publication 1531/C - Austin-Healey "3000" Mk II Convertible
2. Publication No. 2161 - Colour Finishes, Austin-Healey 3000 Sports Convertible, Austin-Healey Sprite
3. Publication No. 2161/B - Colour Finishes, Austin-Healey 3000 Sports Convertible, Austin-Healey Sprite
4. Publication No. 2161/E - Colour Finishes, Austin-Healey 3000 Sports Convertible, Austin-Healey Sprite

From Factory Blueprints

Blueprint	9H5707	A 7125	A 7169	A 7177	A 7229
Model	AN 5	MkII/AN 6	MkII/AN7	MkIII/AN 8	MkIV/AN 9
Black	None listed	Black BK.1	Black BK.1	Black BK.1	Black BK.1
Red	Cherry Red RD.4	Signal Red RD.2 Deep Pink RD.18	Signal Red RD.2	Tartan Red RD.9	Tartan Red RD.9
White	OEW WT.3	OEW WT.3	OEW WT.3	OEW WT.3	OEW WT.3 Snowberry White WT.4
Blue	Iris Blue BU.12	Iris Blue BU.12 Speedwell Blue BU.1	Iris Blue BU.12	Riviera Blue BU.44	Basilica Blue BU.11 Mineral Blue BU.9
Green	Leaf Green GN.15	None listed	BRG GN.25	BRG GN.25	BRG GN.29
Beige/Grey	Nevada Beige BG.4	none listed	Dove Grey GR.26	Dove Grey GR.26	none listed
Yellow	none listed	Highway Yellow YL.9	Fiesta Yellow YL.11	Fiesta Yellow YL.11 Pale Primrose YL.12	Pale Primrose YL.12

From Color-Chip Booklet and Folders

Source	1596/A	2161	2161/B	2161/E	2161/F	2161/H
Basic Color						
Black	none listed	Black BK.1	Black BK.1	Black BK.1	Black BK.1	Black BK.1
Red	Cherry Red	Signal Red	Tartan Red RD.9	Tartan Red RD.9	Tartan Red RD.9	Tartan Red RD.9
White	OEW	OEW WT.3	OEW WT.3 (ivory white)	OEW WT.3 (ivory white)	OEW WT.3 (ivory white)	Snowberry White WT.4
Blue	Iris Blue	Iris Blue BU.2	Riviera Blue BU.44	Riviera Blue BU.44	Basilica Blue BU.11	Basilica Blue BU.11
Green	Leaf Green	BRG GN.25	BRG GN.25	BRG GN.25	BRG GN.25	BRG GN.29
Beige/Grey	Beige	Dove Grey GR.26	Dove Grey GR.26	none listed	none listed	none listed
Yellow		Fiesta Yellow YL.11	Fiesta Yellow YL.11	Pale Primrose YL.12	none listed	Pale Primrose YL.12

5. Publication No. 2161/F – Colour Finishes, Austin-Healey 3000 Sports Convertible, Austin-Healey Sprite

6. Publication No. 2161/H – Colour Finishes, Austin-Healey 3000 Sports Convertible, Austin-Healey Sprite

The last of the orange booklets that I had listed above is 1531/C. The 2161 series of publications are all folders containing color chips – a sheaf of them stapled to the back cover in the case of #2161 and individual chips pasted to the inside

on all the others: 2161/B thru 2161/H.

First we see that what appears to be the earliest listing (1531/C) of colors for the BJ7 (Sports Convertible) makes no mention of BRG! Second, publication #2161, the first of this series of folders containing color chips has a lighter, more yellow shade of BRG, which is coded as GN-25 (printed onto the back side of the color chip). This is the shade of BRG that has been found on some original BJ7s.

Next we find that folder 2161/B shows a darker BRG, but this chip is also coded GN-25. This same color chip for BRG is included in 2161/E, again marked GN-25.

Next, the BRG chip in 2161/F is coded GN-25 and is a lighter shade than found in 2161/B and E. This BRG chip actually is a fairly close match to the one in 2161, the first folder in this series. And finally, the BRG chip in 2161/H, while the same shade as in 2161/B and 2161/E, is now coded GN-29. This folder also shows Golden Beige Metallic, BG 19 and Florida Green has been dropped from the offerings.

Are there errors in the labeling of the BRG chips in folders 2161/B, E and F, or is the color chip wrong? From knowledge that the lighter shade of BRG has been seen on BJ7s and the darker shade on BJ8s I suspect that the chips in the later folders should have been labeled GN-29. But what about the shade shown in 2161/F? It is the lighter one. Should this too have been a darker BRG chip and should it have been labeled GN-29? Experience from BRG paint found on original BJ8s suggests so.

I wish I had folders 2161/C, D, and

G, but suspect that these wouldn't offer any new information except possibly a better handle on when the BRG code changed from GN-25 to GN-29. Since these folders also include Sprite colors, they basically reflect color changes introduced with this car.

From all this, it would appear that originally the BJ7 Sports Convertible did not include BRG among the standard paint colors, and BRG was introduced some time during its production. Also, it

appears that the shade of BRG was changed to a darker one within one year (given the number of 2161/x folders issued and the few-year time span for the BJ8s). Since these color chip folders are not dated (nor were any of the earlier booklets), we can't determine exactly when these changes were made in the literature, let alone when they were implemented during production, though we can guess the approximate time frames.

Finally, there is another publication by BMC called "Service Paint Scheme," issue 2, dated January 1964. I only have a photocopy of part of its contents, but under whites it shows: WT.3 – Old English White/Ivory/Off White, and lists a single mixing formula.

From the color chip booklets and folders, we have seen that OEW has been called by:

a. Ivory White – all of the 1531/x series for the 100-6 thru "3000" Mk II convertible

b. Old English (Ivory) White – all of the 2161/x series on the "3000" Sports Convertible and Sprite

c. Ivory – Publication 1297 dated January 1956, on the BN2

d. Old English White – an un-numbered publication of colors for the BN1

In all these cases the white shade appears to carry the same BMC code of WT.3.

Sprite Colors

Since the 2161/x series of color chip folders includes Sprite colors (and there also was at least one of the 3" x 4" booklets, publication 2596/A on Sprites that preceded them) a few words about these are appropriate. This information comes

from the color chip book and folders and factory blueprints.

It is interesting that Deep Pink and Mineral Blue show up on various blueprints, but not in the color chip folders. This could be because the folders I have access to are for different time periods from the blueprints that list these colors.

Anyhow, I'm no expert on Sprites and will leave figuring out which color goes where and when to them. However, I did want to at least share what information I do have based on the color chip samples available to me.

And lastly, whether you are serious about concours correctness, a student of historical trivia or just happen to have some relevant literature pieces, we on the concours committee would encourage you to share any information you have so that we can fill in some of the missing blanks. It has taken many years to assemble the information presented here, some of which has only come to light in the past month or two. I'm sure there are many who may wish it had been available long ago. With help from other enthusiasts maybe it won't take so long to make it complete.

I would like to acknowledge John Wheatley for providing copies of blueprints that describe the various applications of colors on the different models.

First we see that what appears to be the earliest listing (1531/C) of colors for the BJ7 (Sports Convertible) makes no mention of BRG!

TOOL KITS, PART 1: Original Equipment Tools Supplied with New Healeys



This small photo may be puzzling, but its meaning will become clear to those who read on.

By Roger Moment

All new cars come with tool kits, typically consisting of a jack and wrench for use when changing a tire. Years ago, some manufacturers included an assortment of other tools as well to allow owners to perform small repairs: should they break down on the road. In the 1950s and 1960s I only remember the jack and lug wrench coming with American cars, but it was rather common to find wrenches and screwdrivers in tool kits supplied with European makes.

Austin-Healeys are a perfect example of this, and also the dismantling of tool contents over time. The Healey 100 was delivered with a fairly extensive assortment of items (by today's standards), which was reduced by more than half when the 100-Six was introduced in 1957 and finally, during 3000 Mk I production, shrunk down to contain only wheel-changing tools plus a socket for removing/retaining spark plugs.

The first of two articles on tools describes contents of tool kits as supplied with new cars. In Part 2 I will discuss a number of supplemental tool kits offered by BMC dealers as part of their offering of "Approved Accessories."

Original tool kits underwent a variety of evolutionary changes throughout Healey production. Some changes reflected the addition of specific tools which BMC felt should be included. Others were the result of changing tool suppliers, and still others may have come about because manufacturers had alternative products that were judged to be desirable substitutions.

Whatever the reason, only some of these changes are mentioned in Service Parts Lists. While it has not been all that uncommon to find errors in these sources (part numbers and change points), in the case of tool kits, there is a more compelling reason not to take listed change points too literally. So first let me digress a bit to explain.

Change Point Identification

Healeys were NOT built up on the final assembly line in strict numerical order. This is true whether you are comparing chassis, body, or engine numbers. The reasons for this vary, whether you are researching 100s, 100-Sixes, or the 3000s, and I don't have the space here to explain my analysis of why. But the consequence is that you can think of listed

change points as identifying a chassis (or body, or engine) number where the new/substitute part starts to show up.

Now, if you recognize that chassis numbers often were not finished sequentially, then there could be a lower numbered chassis built up after the "change point" that could have the new component. Similarly, a higher chassis number could have called off the line prior to the identified change, and this car would not have the "latest and greatest" bits.

Therefore, I believe it makes more sense to view changes as occurring at a point in time, and this would be particularly true in the case of tool kits. So if you know when the chassis/car for the listed "change point" was built, then those that were finished after that date should reflect the change, regardless of their chassis number.

There is another aspect to consider as well. Bins of 3000 did not run empty at the same time. In the case of the 3000 Mk I tool kits, a number of items were supposedly dropped at the same chassis number. However, I would not be surprised if the change did not occur concurrently for all of these, and cars completed over a period of time (maybe days, or even weeks) could have contained various assemblages of tools that were being phased out.

Therefore, I will refer to changes as occurring in an approximate time frame, which would be around the time that cars with the referenced item change point were being assembled.

In addition to the tool variations described here, there also were a number of "running changes" that are not documented in Service Parts Lists. These are all associated with brand changes, or even design of an item, though its function remained the same. Joints are one example of this, but with the 100 kit, such substitutions also affected many of the smaller tool items.

I will cover three levels of tool kit sophistication: 1) kits supplied with new 100s; 2) kits with 100-Sixes and many 3000 Mk I; and finally 3) those supplied with later 3000 Mk I and all Mk II, and Mk III.

Finally, I will be using British terminology -- spanner for wrench, and box/hex spanner for socket. However, referring to the accompanying photos, I don't think there should be any confusion.

Healey 100 -- Small Tools

I will first describe the assortment of small tools that were part of the tool kit, followed by tools associated with changing a wheel.

Earliest tool kit version -- Manufacture of the Healey 100 can be categorized into two groups: 19 pre-production prototypes, completed at the Donald Healey Motor Co. in Warwick, followed by BMC production of the 100 starting in June, 1953 at Longbridge, the factory located in Birmingham. The pre-production cars were assembled in batches -- of the first batch one went to the NY car show, one to the LA car show, one was used by Donald Healey for his diving tour from New York to California (and back), and the fourth went to the Frankfurt car show.

We know these pre-production cars came with tool kits

from photos of the tool kits for bodies # 1 and #4 in the first batch, which were completed in the late January-early February 1953 time period. Body #1 was the LA show car, and only a photo in the August, 1953 issue of *Autosport Magazine* exists showing the tool kit laid out in the boot. In 1954 Mel Forme wrote an article describing his experience driving his 100 (which turned out to be Body # 4, the NY show car) across the USA the previous fall. This was published in *Car Life* and includes an excellent photo of the tool kit.

I have not seen any photos of tool kits from any of the other pre-production Healeys, but these two suffice to tell us about some of the differences between these and subsequent kits supplied with production 100s. Photo 1 is copied from the *Car Life* article and shows most of the small items. Photo 2 is a kit I put together, following detailed study to identify the manufacturer brands of certain items. For ex-

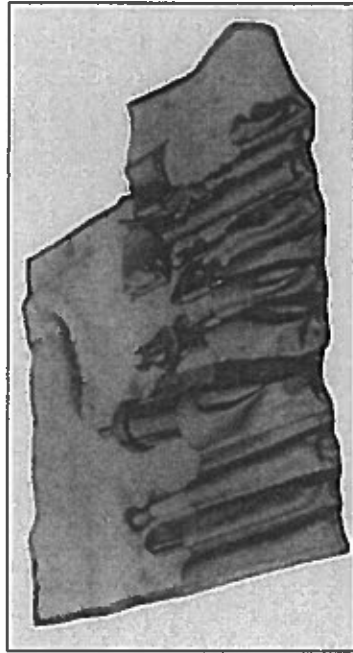


Photo 1 -- Tool kit supplied with Healey 100 body #4, built in the Jan-Feb, 1953 time period.



Photo 2 -- A recreation of the kit for Body #4, assembled using vintage original tools and a reproduction set (dimensions scaled from the text).

ample, I believe the pliers are likely TW and the three open-ended spanners were all Superlams (two with flat handles and one with a hollowed-out handle) and have only the pliers worth sizes marked on them. I also included the spark plug/flopper dual feeler gauge, tyre valve core extractor, and drain lug key because they are listed in later Service Parts Lists of tool kit components, though don't show in the photo. Note that the grease gun is a Tecademil Rasignun, and is stored with the conical adaptor nozzle attached, rather than the end cap. The makes sense as the adaptor is quite bulky, while the flat cap fits nicely into the pouch in the tool roll.

Another detail that differs from tool kits in later production 100s is that the roll material has a white backing (it also is laid out and stitched differently).

Tool Kits, Original Equipment Supplied with New Healeys Production Tool Kits ..

Contents of tool kits supplied with 100s stayed essentially the same throughout BNL - BNC production. The only exception was addition of the front hub dust cap extractor (J in Photo 3) in December, 1953. The threaded part from the dust cap that is pressed into the front spined hub, and the large disk, flat washer, and nut are assembled to the protruding end. The small flat lip is used to keep the shaft from turning as the nut is run down, thereby drawing the cup out of the hub. Because the earlier dust cap's BSF stud threads were changed to UNF by December, 1953, this tool only was made with UNF threads, and will not work on earlier 100s (unless they have had their dust caps replaced with later ones -- which were used through the end of Healey 3000 production).

It is important to remember that we have only been able to examine a very small number of original tool kits. These are from cars built over a scattering of dates, and thus can only provide a limited glimpse into approximate time periods when various brands of individual tools were supplied.

The bits in Photos 4-6 illustrate variations in components found in early 100 tool kits. Those where different sources or appearance have been found include discers, open-end spanners, adjustable spanner, grease gun, and the valve grind tool.

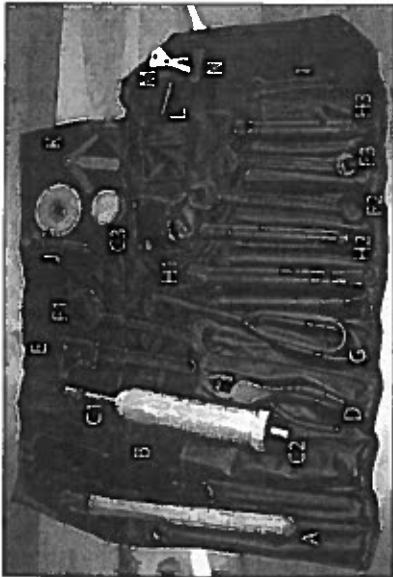


Photo 3 - This version of a 100 tool kit was supplied from late 1954 through the end of BNC production and shows the form that 100 kits evolved to during the first two years of production. It includes: A - valve grinding tool; B - open lever; C) grease gun with the E2 nozzle adapter (plus cap in C1); D - pliers; E - adjustable spanner (T7 - type); F, G, H, I - BSF steel open end spanners; E - flat blade screwdriver; H1 - open plug spanner; H2, H3, H4 - BSF steel four spanners (note their size markings); J - front hub dust cap extractor; K - span plug and tappet leader gage; L - open valve cone extractor; M - Lucas ignition leader and screwdriver; N - tube driver plug key. The wire screwdriver served as a timing bar for the bus spanners. All of the tools shown in this photo are original pieces. However, the bag material is a reproduction made from a light weight non-expanding vinyl, very similar to material found on many original 100 tool bags. A jack with handle (with tool bags for a neck) and knock-off hammer completed the tool kit.



Photo 4 - Tool kit is from an early 100, built August 18, 1953. The three open end spanners are (left to right) Sued, Supperman, and Lucas. The Lucas ignition plug doesn't show well against its envelope (see also Photo 2). The right valve cone extractor is a small tube, turned from aluminum, with DUNLOP stamped around one end. This is the only one made like this that I have ever seen. Also note the wood valve tapping tool handle is covered. This original tool kit is made from a dark blue oblong-like material that is very thin. Most 100 tool kits that have been seen were in a black material.

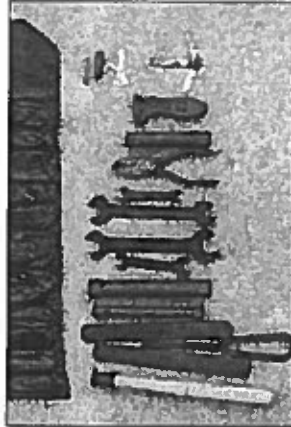


Photo 5 - Tool kit from a low-mileage 100 built November 9, 1953. Note the different shape adjustable spanner (described by the Brits as a gender style). The 7/16SW x 1/2W spanner (left-middle) is Austin, as are the 3/16SW x 1/4W and tappet ones, while the 5/16W x 3/8W one (folded handle) is Supperman.



Photo 6 - Tool kit from a 100 built February 28, 1954. Note the Sued 1-hole-hole beam, Shelling Birch Jack, and 7" adjustable T" spanner. The 3/16W x 1/4W spanner (left) shows the adjustable 7-inch T" spanner (left-middle) is Austin - located by the handle like shape in the jaw tips. The other spanners are Supperman, while the tappet one (between the adjustable spanner and the assembled hub dust cap extractor) is Austin. While this kit is missing the valve grinding-in tool, it does help confirm time periods when certain specific item configurations were used (note how the screw driver, which also serves as the timing bar for the bus spanners, had been defined).

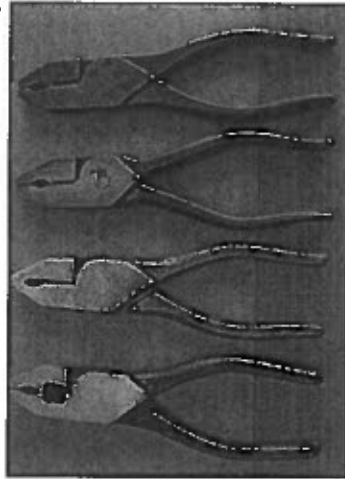
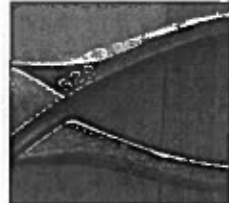


Photo 7 - The four pliers commonly found in 100 tool kits are (left) TPL 52L, Wilkinson's, and El Paso.



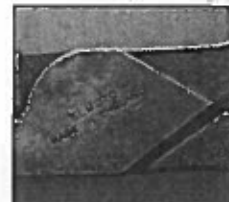
7a - T. Williams is a major maker of English tools, including the Supperman open-end spanners. This pair of pliers has been identified for a pre-production kit and also has been found in a kit from BNL's built in 1954 and 1954-1955.



7b - We don't know who manufactured pliers marked with the 52L, but these have been commonly seen in kits supplied from December, 1954 through the end of BNC production.



7c - Wilkinson's pliers have been seen in tool kits supplied with production 100s built in Australia from 1950 built in February, June, and December, 1954.



Tool Kits, Original Equipment Supplied with New Healeys

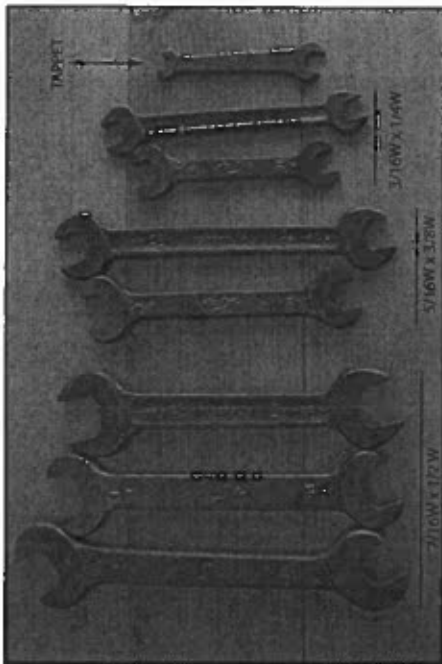


Photo 8 - Shown here are examples of open-end spanners found in production 100 tool kits. I believe the pre-production kit for body #41 had Superdun spanners (except for the Austin taper one), identified by their sharp points at the jaw tips. Also, being from early 1952, they likely would have been marked with only the Whitworth sizes, as older British spanners tend to be. (Note only the 7/16 sizes are listed in the 100 Service Parts List.) 1) The taper spanner (far right) was Austin in all tool kits (it has no size markings and actually doesn't fit the taper pin nuts!). 2) The 7/16W x 11/16W spanner in the August, 1953 tool kit was a Swal brand (rarely seen in 100 kits). More commonly, Austin spanners of this size have been seen in other 1953 and early 1954 kits. Subsequently, this spanner was Superdun through remaining BR1 and all BR2 kits. 3) The 3/16W x 3/16W spanner was Superdun in the pre-production kit that there is a photo of and one August, 1953 kit. Austin in later 1953 and Superdun in kits from February, 1954 on through the BR2s (the 5/16W and does fit the taper pin nuts). Austin versions of this size could well have been included in any 1953 tool kit. 4) The 3/16W x 1/4W spanner has been found to be Austin through 1953 and into February, 1954, and Superdun thereafter. One marked Superdun has been seen in a December, 1954 kit. All Superdun spanners found so far in production 100 tool kits have been marked with both Whitworth and corresponding BSF sizes (as in the example shown here). Note: Austin spanners (and also the Swal one) have a blunt jaw tip shape compared to Superdun ones. The sizes on Austin spanners, when marked, are Whitworth, though they don't show the "W".



Photo 9 - Most adjustable spanners were made by King Ditch. The 7" T" spans shown at the right has been seen in a pre-production percentage kit, an early production 100 built in August, 1953, and production 100s from January, 1954 through the end of BR2 production. The historic, 4-inch gullet style has been seen in tool kits from 100s built around November, 1951. Those examples were like the one in the center of the photo. However, King Ditch also made them with right-facing jaws, as shown at the far left. I've found this configuration more common when searching for originals.

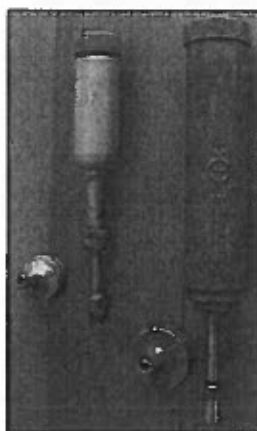


Photo 10 - Tool kits found in production 100s built in 1953 and as late as March, 1954 came with Hubert grease gun (top), kits in cars from June, 1954 on had Verulam 2788 ones. Both versions came with an adapter nozzle for filling the steering box with oil.



Photo 10a - Grease gun adapter nozzles are extremely rare and nearly impossible to find. Because the nozzle is rather bulky, grease gets stuck better in the nozzle with the nozzle attached and the fat cap in the small open pocket. This maintains chances of the nozzle poking a hole in the thin fabric when rolled up tightly.

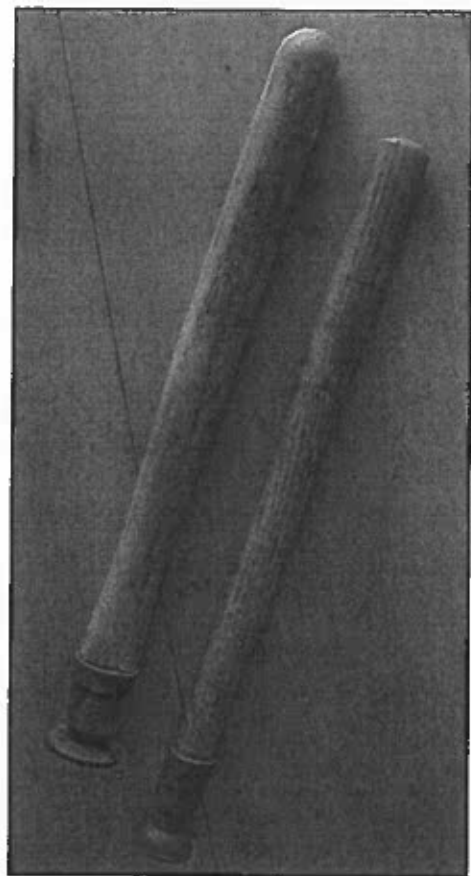


Photo 11 - The valve grinding-in tool has been found in two configurations, both of which have been seen in original tool kits from 1953 through 1955. All examples found so far in 1955 tool kits have been of the upper style. Given the marked number of original kits that still survive, and the fact that the two seem to show up in roughly equal numbers throughout at least three years of 100 production, it is not possible to form any conclusions regarding one being favored over the other.

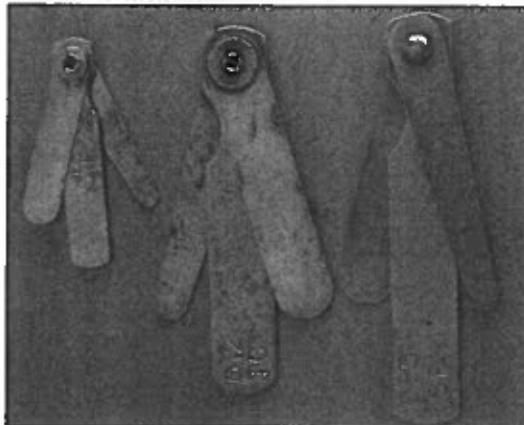


Photo 12 - The Lucas ignition gage, with screwdriver, supplied in 100 tool kits had a hollow brass eyelet. This construction may have carried forward into early 100-5s tool kits. Solid rivet construction "right" has been seen in 100-5s and 3000 MG-1 kits.

Photo 13 - A sports plug/tappet clearance feeler gage was supplied with 100s, and continued with 100-5s and 3000 MG-1 tool kits. On 100s the sports plug gage side was marked 025 SP while the tappet side had 015 TC. The gage at the bottom of this photo is for the 100. The 100-5s and 3000 (feeler gages were marked 025 SP and 012 TC. The visible example is from an early 100-5s. The top one is from later 100-5s and 3000s.

Tool Kits, Original Equipment Supplied with New Healeys



Photo 14 - This is the only period photo I am aware of that shows an original lead hammer for a Healey 100 tool kit.

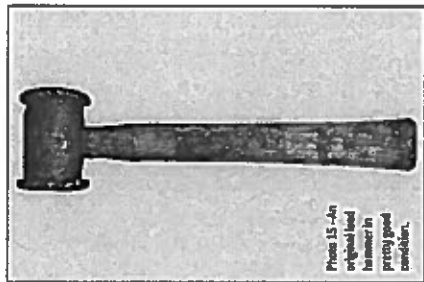


Photo 15 - An original lead hammer in pretty good condition.



Photo 16 - A reproduction lead hammer made using special alloys and shot from Photo 15.

Hide-hide hammers typically integrated after very little use. The lead ones that replaced them in tool kits turned no better, and there are extremely few that exist in any condition to guide us in what they looked like. There is one usable period photo that appeared in a "Manual of 1955 Road-tested Sports Cars" by Joseph Wherry and published as a Hitman publication. Using tools shown alongside the hammer to scale from, it was possible to calculate dimensions which

checked out against a couple of remnant hammers that have survived. Starting in late October, 1955, a Thor copper-copper hammer was provided in tool kits, and this was retained into 84J production. Examples of various hammers are shown in Photo 17. One point to be aware of: Copper hammers will definitely mark knock-off ears, so it is preferable to use a soft lead one for initial loosening and final tightening whacks, and a 3-pound plastic dead blow one

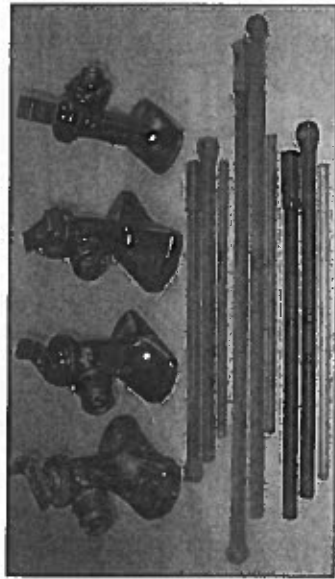


Photo 18 - Left to right: Shelley 6-inch (no date marking), used through 1953 and into around March, 1954; Shelley L123 used in 1954 to around mid-July, 1955 (these would have carried a 54 date into the first 3 months or so of 1955); and a SS date marker; King Dick 8, 1957 (no date marking) used from around July, 1954 to possibly October, 1955; and Shelley L21 from October, 1955 through the end of 1962 production. These have been found with a SS date in a car built in May, 1955, but many B12's finally came with L21 jacks dated 55. The top set of handles (14" long) are for the Shelley 6-inch and L23 jacks. The 21" long handles, center, are for the King Dick Jack. And the bottom handles are for the Shelley L21 series jacks.

Healey 100, Tools for Changing Wheels

This group of tools includes knock-off hammers and jacks. The Service Parts list calls out three part numbers for the hammers. A Hide-hide one up to C. 159257 (build date around October-November, 1954); a lead hammer up to C. 229453 (build date around mid-July, 1955); and a copper-copper one on through the end of B12 production.

In reality, original tool kits found in cars during 1953-54 contained hide-hide hammers in either of two sizes (one even had a hide-copper hammer). These appear to have been made by Thor, though markings on them are few. Often the heads have a "1" or "2" stamped into the side, but nothing else. One of these original hide-hide hammers is shown in Photo 6. I have also seen an early hammer with but 501310 stamped into the head. From other research we know this is the part number awarded to Thor for their technique of crimping the iron head pockets to retain the hide or copper faces.



Photo 17 - Various hammers included in 100 tool kits. From the bottom up:

- Size 1 Hide-hide.
- Size 2 Hide-hide. This size is heavier and would work better, but still won't hold up for long. Both of these hide hammers can be purchased new today from Thor in England. Thor also sells components - copper and hide head faces, handles, locking lugs - for restoring original hammers.
- A reproduction of the lead hammer used with many 100s during 1954 and 1955 (B11's and parts B12's). The manufacturer of these hammers is unknown.
- An original (restored) Thor copper-copper hammer embraced in late 1955 and included with most E-cylinder Healeys well into M1B production.

for the majority of the riding blows.

As for jacks, there have been five different ones found in original Healey 100 tool kits. Again, the Service Parts list is of minimal help. It calls out one jack for B11's up to C. 227339 (build date around mid-July, 1955); a second one to C. 229080 (build date around late October, 1955); and a third through the end of B12 production. Fortunately more original jacks have survived than the smaller look, so we have better knowledge about when each was included in the tool kits and can start to sort out observed variations.

Photo 18 shows four of these jacks, and Photo 19 the fifth. It is apparent that the first listed part number covers both the Shelley 6-inch and L23 models, and the latter of these may have been a replacement by Shelley when the 6-inch model was discontinued.

However, the second listed jack part number covers both the King Dick 8, 1077 and Shelley 1201 jacks, and we don't know whether both were used interchangeably between July and October, 1955, or if the 1201 became a running change/replacement for the King Dick.

Regardless of the model, none of these jacks will fit gracefully under an axle lifting point for changing a wheel, and would require digging a small pit to be slid into place. From a practical stand point, a scissors jack that flattens down to a height of less than about 2 1/2" should be carried for use should you get a flat tire while out on a drive.

Photo 20 - An important part in all of the jacks pictured, and one that is sometimes missing, is a snap ring with bent tabs (arrow) that engage a web cast into the jack base. The ring grips the large screw shaft with enough force to keep it from readily rotating as the top gear turns, thus causing the shaft to rise. When the screw reaches the end of its travel, the shaft now turns with the gears, causing the smaller inner threaded shaft to rise. There is a structural benefit for the shafts to extend and retract in this order, as it is important to try and replace these snap rings if found to be missing.



Photo 19 - A Shelley 1201-55 jack has been found in three original 100 tool kits: A B11 built 7-19-55, a B12 built 8-23-55, and a B12 built 10-12-55. It uses the same handles as the Shelley 6-inch or L23 jacks (Photo 18) and is 5 1/2" tall, making it about 1/2" to 3/4" shorter than any of the other four Healey 100 tool kit jacks.



Tool Kits, Original Equipment Supplied with New Healeys

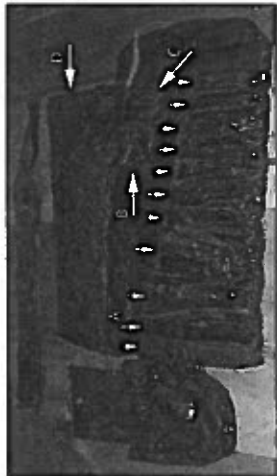


Photo 21 - Three-piece set of tool bags for Healey 800 tool kits. The roll for small frames contains eleven pockets (small arrows, A) of varying width across the bottom, an open-ended pocket (B) a small pocket with closing flap (C), and a larger flap at the top (D) that folded over before rolling up. This bag set is dark blue, and almost appears to be black.



Photo 22 - The steps on the jack bag had a rather small button, about 1/8" in diameter.

100 Tool roll material

There were three pieces to the 100 tool bag set - a roll for the small tools (seen in the photos), a bag for the jack, and a bag for the jack handles. Two types of material have been seen from which these bags were sewn: A very thin oilcloth-like material and a slightly heavier, light-weight leathercloth (non-stretch vinyl). Almost all original bags sets we've been able to examine have been black, though there were a few dark blue ones found in Healey Blue cars with blue trim (including the boot).

100-Six and 3000 tool kit

Tool kits for these two models of Healey were identical, except for the inflexible plastic "buttons" at the pouch

opening ends and attaching points of the plastic tie straps. The 100-Six bags were about 18 inches long, while the later 3000 bags were closer to 24 inches long. Given the single large pouch dimensions, it is easy to understand how the smaller tool kits of these tool kits might easily fall out and become lost over time.

The copper-copper knockoff hammer included in most BN2 tool kits continued on in the 100-Six kits. Sometime in the early 1960's the patent expired and copper-copper hammer heads were marked with SIZE 1 REF 310, THOR, COPPER HAMMER on one side and Made in England, THOR HAMMER COMPANY, Shirley Birmingham on the other.



Photo 24 - For cars with side wheels, instead of a lock-off hammer, a hub cap pulling tool and lug nut brace (lug wrench in American terminology) were included with the tool kit.



Photo 25 - A Shelley LJ2 series jack (L, dated with the year of manufacture), was provided with 100-Six tool kits and possibly early 3000 Mk1 kits up to C. 2264 (build date around June, 1959). At this point the jack was replaced with a King Dick #1 1881 model (A), which was slightly shorter. Both jacks used the same handles. The King Dick jack was continued with 3000 chassis into the range around C. 05500 (build date in June, 1960) when the tool kit was greatly reduced and the jack replaced with a Shelley LJ25 per type.



Photo 26 - The 8066, both built in 1958, have been found with Shelley 70A jacks. It is not known whether this model replaced the Shelley LJ2 jack or was supplied interchangeably with it. This 70A jack may also have been supplied with early 3000 Mk1 tool kits.

Photo 23 - This is the tool kit provided with 100-Six and 3000 Mk1 Healeys up to around mid-June, 1959. The screwdriver arrived as the Tommy bar for the spark plug bar spanners. The grease gun is a Techament 3002. See Photo 13 for information on the dual spark plug-tappet feeler gauge. The copper-copper hammer has PATENT 501310, THOR and MADE IN ENGLAND cast into both sides of the head. Hammer with this marking are becoming harder to find. This tool bag is a fairly good reproduction and is still available today.

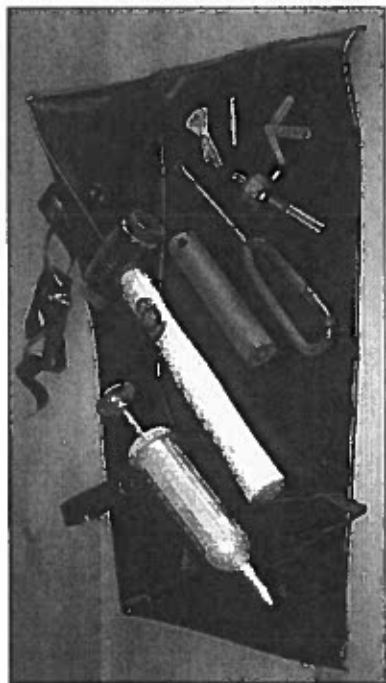


Photo 27 - This tool kit, but without the octagon hub spanner, was introduced around June, 1960. Note the Tommy bar shape (next to the spark plug spanner). The Tommy bar markings changed around 1964 when this patent for attaching the forces expired. The jack kit is a Shelley LJ25 (no date marked), and is printed on an orange-red shade. The jack pocket flap was thin and made idly ridged - thus it is common to find jacks broken in this area. (The color of this jack appears too pale, due to the lighting). The woven strap was added around C. 12200 (BN7) and C. 11595 (B77) (estimated build date around August, 1960) to hold the jack against the left rear bumper bar in the boot. The octagon hub spanner was added for the 1967 models, when this style was when hub cap replaced the serrated knock-off. These octagon caps were also used on cars delivered to European countries that required them in previous years, going back as far as 100-Six BMW models in some instances, and these cars would have also had the octagon spanner in their tool kits. Though not listed in the BLS Service Parts List under tools, a yellow plastic line valve core extractor (See line) similar to the lens one shown on the right side of photo #23, has been found in a number of original 100 tool kits.

Photo 28 - At some point during BLS production the jack casing with a thin jack handle pocket (A) [CA.295], which had been in use since mid-1960, was changed to one that was thicker around the lip (B) and had a new casing number (CA311). The jack base remained unchanged (LJ25). The repaired jack in this photo is a very close match to the original one on the left one. The handles for these jacks consisted of a zinc-plated 1 1/2" steel rod, 18 inches long.

Tool Kits, Original Equipment Supplied with New Healeys

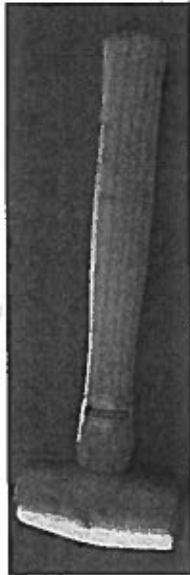


Photo 29 - Sometimes, possibly during late 1955 or early 1957, the Thor copper-coated hammer was replaced with a Swamowit alloy one. (By weight it feels like the head is cast from a zinc alloy, but certainly not lead). This hammer may still be available from sellers of parts for British cars (including Jaguar).



Photo 30 - The Swamowit label.

tools just advertised as for Healeys. It is also important to carefully examine details on any item you may be considering to be sure that it is exactly what you are looking for.

As you can see there were many variations in some items (from alternate manufacturers or changes in model offerings, such as with jacks), but their inclusion in tool kits throughout different time periods when Healeys were built often followed some degree of logic. So it isn't a case of "anything goes" if you want to get things right.

Your effort to complete this element of your Healey correctly will be rewarded in your own satisfaction and by the appreciation others will show for seeing how the detail was originally done when the cars were new.

Finally, please e-mail me at finement@comcast.net if you have some original 100 bit tools, so we can pin down better time windows when various brands were included.

Assembling a Tool Kit for Your Car

Few Healeys today have complete tool kits, though many have a small number of the original components. Gathering the missing bits can be very time consuming. Doing so involves first determining what is appropriate for your car (which requires knowing when your car was built - information obtainable from the British Motoring Heritage Trust (BMHT) in England); second locating the items; and third sometimes restoring it, which typically involves removing rust followed by refinishing.

Original tools are becoming harder to find than in past years, and consequently prices have been going up. Many of the items used in Healey tool kits were also included with kits for other English cars, so don't limit yourself to looking at

TOOLS, PART 2: BMC Supplemental Tool Kits

By Roger Moment

There is More to the Tool Story ...

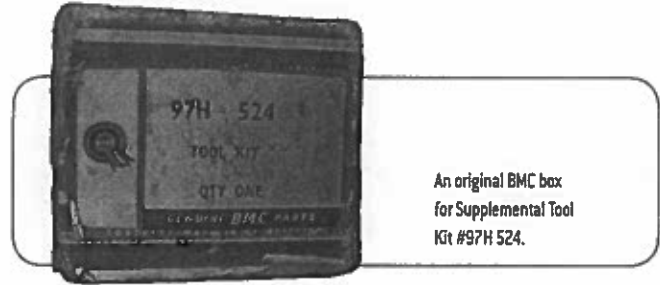
During the past decade British tools, and particularly ones that came with new Healeys, or were offered for sale by BMC among their Approved Accessories, have become a new focus of interest for me. When I first started to restore my Healey 100 to its as-new condition and configuration my attention was on the car's appearance and operation. When purchased in 1975, it still had 70% of the original tools. Once I had restored it to a reasonably-acceptable level, I set about locating the missing items, and reproducing the tool bag set. This search included visiting owners of cars with original tool kits, and also contacting the president of Thor Hammer Company as part of my quest to learn about an unusual (and non-American) knock-off hammer that came with my car, but was beginning to look suspicious as maybe non-English. This became the start of a much larger facet of my interest in Healeys.

As I delved deeper into the variety of English tool manufacturers, and how their items changed over the years, the world of tools became much more than just filling missing voids in a tool kit. It began, more and more, to open a window into what motoring was like in England during the post-war era, and particularly the 1950s and 1960s. I believed that I was getting a glimpse of how British motorists approached automobile ownership, how manufacturers recognized the do-it-yourself attitude many of these owners had, and how the state of automotive engineering, which translates into product reliability, factored in to marketing and ownership. Having grown up during this period as well (American cars were a hell of a lot more reliable at that time) I felt I was developing a picture of the world Austin-Healeys originally were born into.

This aspect of my automotive hobby thus turned my thinking to a more historical vein, and has given me a greater appreciation for how far the automotive industry has developed – first, throughout the first half of the 20th century, second during the next three or four post-war decades, and finally over the past 10-15 years. We've come a long way to the computerized controls, 100,000-mile warranties, run-flat tires, 10,000-mile tune-up intervals, 8000 miles between oil changes, and satellite radios have become the modern "norm" (to list a few of those things that we take for granted in new cars today).

So this second of two articles I've prepared on tools may just give you a little peek into more about your Healey's heritage.

You probably already know a bit about the tool kits that were supplied with New Austin-Healeys. The one that came with new 100s was rather extensive, compared with that sup-



plied with the 100-Six and 3000 Mk I roadsters, which, in turn, contained many more items than were included with 3000 Mk II and Mk III tool kits. However, did you know that BMC also marketed Supplemental Tool Kits, sold by BMC dealers, and listed in brochures on BMC Approved Accessories for all of their lines of automobiles?

Previously, I have described contents of the various tool kits supplied with new Healeys. A good friend in England, Neil Bougourd, whose father had owned a BMC dealership years ago, subsequently introduced me to the larger world of British tools and BMC sales of these to car owners. This has grown into a passion in recent years, so this second part of my series on tools will cover additional tool items that were available through BMC dealers.

First Some Background

Lack of reliability, as we know it today, is one characteristic associated with automobiles prior to the 1960s. Cars required relatively frequent maintenance attentions (at intervals from 1000 to 3000 miles), and in Europe owners often took on these chores themselves, partially for the cost savings and partially because, following the war they had a greater orientation towards self-reliance, at least with regard to routine servicing tasks. It could be routine practice to spend an afternoon out in the garage turning a wrench while listening to the radio.

In addition, motorists needed to be prepared to sort out unexpected breakdowns on the road, and were more willing to undertake such tasks than they are today. For this reason manufacturers, particularly in Europe, tended to include modestly extensive tool kits with their new vehicles. By the 1960s, for perhaps a number of reasons, not the least being improved reliability of the car, these kits often became much more Spartan, consisting of little more than tools necessary to change a wheel or replace a spark plug.

In the 1940s the British Standard system was used on larger British fasteners – Whitworth, which had coarse threads and British Standard Fine, or BSF, for fine threads. A second thread system, BA (metric-based), was used for very small screws.

In the early 1950s the British automotive industry initiated a major change, in which they introduced a new Unified thread system for bolts and screws. Unified National Fine (UNF) threads were compatible with American SAE (Society of Automotive Engineers) threads, and Unified National Coarse (UNC) matched USS (United States Standard) or American coarse thread fasteners. An additional benefit to the new system was that the hex head and nut sizes matched those of comparable American items for a given bolt shaft diameter, making it possible for us "Yanks" to use our American wrenches to work on the UNF (and UNC) fasteners.

During the 1950s British car manufacturers phased out the British Standard Thread system, but still produced products that used these fasteners on some components, and UNF or UNC on others. The hex head and nut sizes for BSF and Whitworth fasteners are a few thousandths of an inch larger than those of corresponding thread diameters in the UNF system, making it necessary to have BSF spanners (British terminology for our wrenches) as well as American ones (for the UNF bolts) in your tool assortment when working on these cars. Along with the smaller physical hex size differences, markings on both UNF nuts and bolt heads were introduced to make it easy to quickly distinguish between fasteners in the two thread systems.

Most BSF spanners are marked with both the BSF and Whitworth sizes (1/4 BSF corresponds to 3/16 W), while the UNF spanners are marked with the across-the-flats hex bolt head or nut dimension (e.g. 1/2 AF which is the same size as an American 1/2" wrench).

The Healey 100 is a good example of this mix of thread systems. On BN1s the drive train used BSF fasteners, as did many suspension components, while the body had UNF ones. With the change to the hypoid rear axle in late 1954, the engine and 3-speed gearbox continued to use BSF screws and bolts, while the rest of the drive line changed to UNF (I know of no coarse thread fasteners used on Healey models except where bolts screw into tapped threads in aluminum, such as attaching the adjusting link to the front plate of generators, or mounting brackets to intake manifolds on 6-cylinder models).

With introduction of the BN2, the new 4-speed gearbox used UNF fasteners. In addition, most of the suspension bolts were also changed from BSF to UNF, leaving basically only the engine with BSF bolts. From the 100 BN1s through the end of Healey production, all body screw and bolt fasteners were of the UNF system. For these applications, you can replace these UNF fasteners with ones found in American hardware stores.

An important exception:

For the very small screws used in electrical and fuel system components (carburetors, fuel pump, and fuel gage sending units) the BA thread system (based on the metric system in use in Europe) was retained throughout all Healey production; BN1s-BJ8s. You will only be able to find these fasteners from suppliers who deal with British screws and bolts – not a likely occurrence should you break down on a trip (message: carry extras of these unique screws among your travel kit spares).

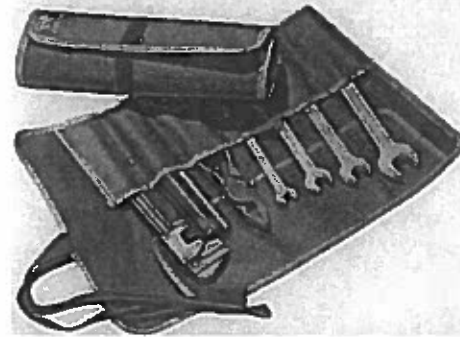
Supplemental Tool Kits

Since Healey 100s had a large number of UNF bolts, but the tool kit contained only BSF-sized spanners, it was only of limited use. It is likely that tool kits included with other BMC autos in the early 1950s also had only BSF-sized spanners. Subsequent 6-cylinder Healey models used UNF fasteners throughout, but their tool kits had been reduced in size and contained no spanners at all, except for the box one for removing spark plugs.

To support motorists interested in performing more work themselves on their cars, BMC offered supplemental tool kits (as well as individual tools) among their list of Approved Accessories. The earliest documentation I have for one of these kits is from a BMC magazine about BMC products that was sent to dealers. Called *The Austin Magazine*, the February, 1955 issue

TOOLS

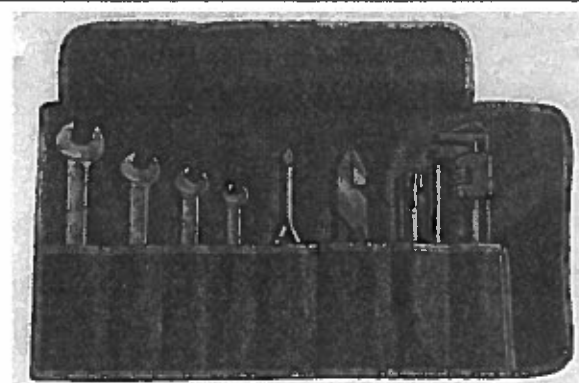
The tools in this supplementary tool roll are robustly made and finished. For the mechanically minded a kit well worth having and ideally suited for all B.M.C. cars.



For those owner-drivers who prefer to do more of their own maintenance and consequently wish to supplement the above with additional tools the following can now be purchased from Austin Distributors and Dealers. Price 25s.

- 1 black, hessian backed, plastic tool wrap with red binding and gold Austin motif containing:
- 1 - 3/16" x 3/8" A.F. Super-slim, double-ended cadmium plated spanner
- 1 - 7/16" x 1/2" Ditto
- 1 - 9/16" x 5/8" Ditto
- 1 - 11/16" x 3/4" Ditto
- 1 - pair 6" lay-on-joint type black combination pliers with polished jaws
- 1 - 1/2" x 9/16" A.F. tubular box spanner
- 1 - 6" Tommy-Bar

Photo 1 - Austin Supplemental Tool kit (BG 2131) illustrated in a 1956 BMC Approved Accessory brochure. (Image courtesy of Reid Trummel)



- Supplemental Tool Kit, Containing:**
- 4 High-tensile Cadmium-plated Double-ended Spanners
 - Sizes:
 - 3/16" x 3/8" A.F.
 - 7/16" x 1/2" A.F.
 - 9/16" x 5/8" A.F.
 - 11/16" x 3/4" A.F.
 - 1 pair 6" Pliers
 - 1 - 7" Adjustable Spanner
 - 1 - 1/2" x 9/16" Tubular Spanner
 - 1 - 3/8" diameter Tommy-bar
 - 1 Phillips Screwdriver
 - All wrapped in a waterproof canvas roll

Photo 2 - Images of 97H 524 Supplemental tool kit and contents description taken from a Salesman's Guide to BMC Approved Accessories. The open-end spanners actually were zinc-plated.

Tool Kits, BMC Supplemental Tool Kits

contained an article on hints for getting the best performance from Healey 100s, as well as information about an Austin Supplementary Tool Kit (BMC part number 8G2131) containing AF size spanners, a pliers, and an adjustable "F" spanner. The tool roll for this kit had seven pouches and a gold flying "A" Austin emblem printed on the outside.

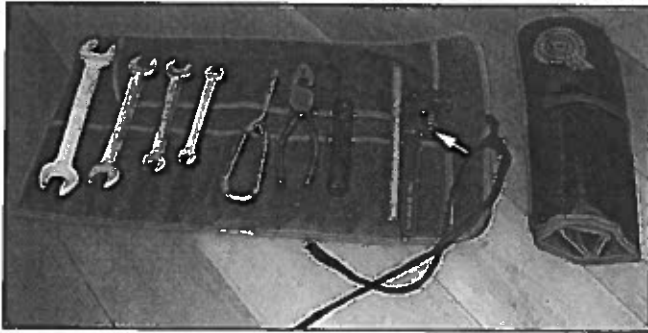


Photo 3 - An original 97H524 tool kit. The outside of the roll had a BMC rosette printed on it. Note the grain texture to the material coating. The wire Phillips screwdriver was nickel-plated. All spanners are AF-sized and zinc-plated. The box spanner is stamped with sizes 1/2AF and 9/16AF. Circular dimples (arrow) to retain the screw pin are an identifier that this adjustable spanner was manufactured by T. Williams. Some kits had zinc-plated pliers or adjustable spanner, but most finishes on these two items have been found to be black, as shown here.

This same brochure also lists a second BMC supplementary tool kit (BMC part number 97H524 -- but no photo) for a slightly higher price. We know from other literature that this kit came with a roll having 8 pockets and holding the same tools as in the Austin kit plus a bent wire Phillips screwdriver.

A photo of the 97H524 kit and list of tools appears in a Salesman's Pocket Guide to BMC Approved Accessories (not dated, but describing touring kits for BMC autos, including Healeys up through the MK II).

The Supplementary Tool Kit, 97H 524, is also listed in the Index and described in Healey 3000 Owners Handbooks (that came with the cars) starting with handbook publication numbers AKD1102E (which is the first one that includes the BJ7 on the

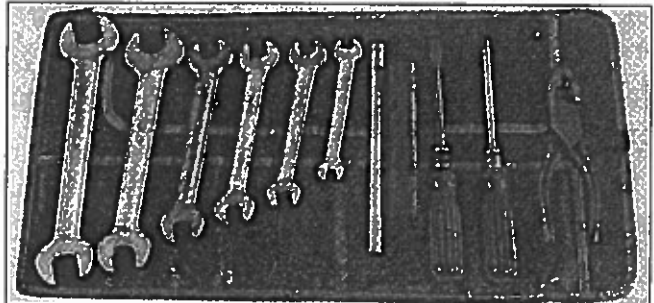


Photo 4 - Superlim is a brand name of tools manufactured by T. Williams. The tool kit shown in this brochure is the BMC 97H 524 one.

title page) and continuing through BJ8 Owners Handbook AKF 4094B .

Beginning with BJ8 Owners Handbook AKF4094C (dated 1966) the tool contents was increased and the kit given a new part number, AKF 1596. An announcement of this tool kit upgrading from the 97H 524 also appears in the July 1966 issue of BMC Service Ltd. News Review, an internal BMC newsletter.

The AKF 1596 tool kit is similar to, but a bit more extensive than its predecessor, 97H524, now having two additional open-end spanners and a wood-handled flat blade screwdriver (along with the Phillips, which now also has a wood handle), but without the adjustable "F" spanner. It used the same 8-pocket tool roll from the 97H524 kit .



AKF 1596 (was 97H 524)

Supplementary Tool Kit Containing:

6 High-tensile Cadmium-plated Double-ended Spanners

Sizes:

1/16" x 3/8" A.F

1/16" x 1/2" A.F

1/2" x 9/16" A.F.

9/16" x 5/8" A.F

1 1/16" x 1 1/16" A.F.

3/4" x 7/8" A.F.

1 pair 6" Utility Pliers

1 - 7" x 3/8" diameter Tommy Bar

1 - 1/2" x 9/16" A.F. Tubular Spanner

1 - Screwdriver 8" LG, Wooden Handle

1 - Screwdriver Phillips, Wooden Handle

All wrapped in a waterproof canvas roll

Photos 5 - Image of AKF 1596 Supplemental tool kit taken from BMC News Review, dated October 1966. The description is from the July 1966 issue of this internal BMC publication.

The accompanying photos show examples of these supplemental tool kits. Variations in some component finishes have been found among original examples of both kits, such as zinc-plated or black oxide finished box spanners or adjustable "F" spanners, and the shape of the metal ferrule on the AKF1596 wood-handled screwdrivers.

The open end spanners in both the 97H524 and AKF1596 kits were all zinc-plated (not cadmium as in the descriptions), marked Superlim, and made by T. Williams. The pliers are by the same manufacturer, and have a "TW" mark forged into the handle. The wire Phillips screwdriver is short, compared with the wire flat blade one included in 100 tool kits, nickel-plated, and has no manufacturer marking.

The box spanner in 97H 524 kits has AF size markings stamped into one flat at each end and was 4 inches long, and 5 inches long in AKF 1596 kits (with size markings stamped into the tubular

center). The 4-inch versions have only been seen with black oxide finishes, while the 5-inch ones have typically been zinc-plated. (Some BMC photos of the AKF 1596 kit show the 5-inch-long version with a black oxide finish.) Tommy bars could be 6 or 7 inches long in either kit, and all appear to be zinc-plated. These could be 5/16 or 3/8 inches in diameter, depending on the box spanner drive hole size.

The 7-inch adjustable "F" spanner, though only marked MADE IN ENGLAND, is most likely also from T. Williams, and has two small dimples retaining the shaft that the knurled screw rides on. Some have been found with a "TW" mark inside a diamond on the movable jaw. Closely comparing these with others without the "TW" shows that all other details match between the two, suggesting that both were made by the same company.



Photo 6 - An original AKF 1596 tool kit. Box spanners have been seen mostly with zinc-plated finishes, though a black oxide finish is also possible.

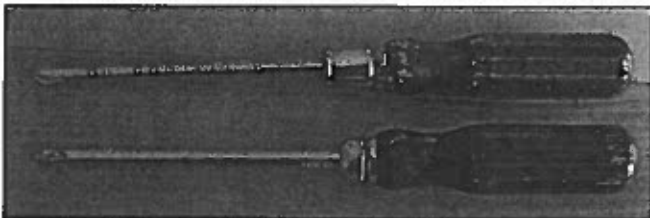


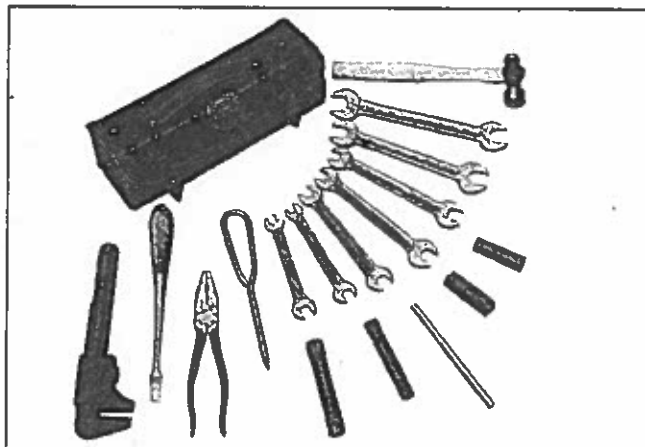
Photo 7 - The screwdrivers in AKF 1596 kits had painted wood handles with seven shallow gripping flutes. The shafts were nickel-plated. Both flat and Phillips screwdrivers had FOREIGN stamped in small letters near the ferrules, but only the Phillips screwdriver shafts also had RECESS 2 and CHROM-VANADIUM markings. The earliest photo of an AKF 1596 kit shows conical ferrules (upper) on the screwdrivers and there is some uncertainty as to when they changed to the rounded shape.

The wood screwdrivers in the AKF 1596 kit usually have "FOREIGN" stamped into the shaft, though some have also been seen with "GERMANY" that are identical in all construction details and other markings. That these were made by the same manufacturer is underscored by their being identical in all other details, such as other shaft stampings and the unusual 7-flute handles painted in a metallic-hued red point (other wood-handled screwdrivers typically have an even number of flutes, which are also deeper).

The material of original tool rolls most often is found to have deteriorated quite severely over the years. The coating commonly has a leather grain, and the gold BMC rosette, printed on the outside, is usually badly faded, with areas missing from the design. A couple of original rolls have been also seen with the weave of the jute backing showing in an otherwise smooth coating, rather than the pebble-grain design.

Even More Extensive Tool Kits

But there is more!!! A BMC Salesman's Guide to Approved Accessories, not dated, but including reference to items for the Healey 3000 Mk II, also contains a photo and contents description for an even larger supplemental tool kit. It carries BMC part number 97H 2100 and was packaged in a box-like "carrier bag" with leather handle. Neither my British friend nor I have ever seen an original of these kits, but we decided to try and assemble one and reproduce the hold-all.



97H 2100

Supplementary Tool Kit in waterproof canvas carrier bag containing:

- 1 - Hammer, ½ lb. Ball Pein
- 1 - Pr. Pliers, 8", side-cutting
- 1 - Screwdriver (Wooden-handled)
- 1 - Screwdriver (Phillips-headed)
- 1 - Adjustable Spanner, 10"
- 1 - Set Double-ended Spanners consisting of:
 - 1 - ½" x ⅞" A.F.
 - 1 - ¾" x ⅞" A.F.
 - 1 - 1½" x 1½" A.F.
 - 1 - 1½" x ¾" A.F.
 - 1 - ¼" Whit., ⅞" B.S.F., ⅞" Whit., ½" B.S.F.
 - 1 - ¾" Whit., ⅞" B.S.F., ⅞" Whit., ¾" B.S.F.
 - 1 - ¾" x 1½" A.F.
 - 1 - Box Spanner, ⅞" x ½" B.S.F.
 - 1 - Box Spanner, ¼" x ⅞" B.S.F.
 - 1 - 6" Tommy-Bar
 - 1 - Drain Plug Removing Tool, 1½" A.F. (hexagonal)
 - 1 - Drain Plug Removing Tool, 1½" A.F. (hexagonal)

Photo 8 - Photo of the 97H 2100 Supplementary Tool Kit from a Salesman's handbook of BMC accessories from around 1961.

Interestingly, during this project we also discovered what appears to be an error in the contents description. The larger of the two box spanners is described as 9/16" x 1/2" BSF. However this size spanner is physically much larger than the larger box spanner shown in the photo. Comparing measurements of original box spanner examples, we concluded that the one in the photo is actually 1/2" x 9/16" AF, which makes sense as these fastener sizes are quite common on vehicles built during the 1960s, whereas 1/2" x 9/18" BSF fasteners are very large and rarely found on autos from this time period.



Photo 9 - Only the hex drain plug tools and hold-all box in this photo of a 97H 2100 are reproductions. Because of the weight of the tools I concluded that the box must have had a structural liner, which I made from 1/8-inch cardboard, similar to that found in trim board applications. The covering is original British tool roll material, with a silk-screened BMC rosette. All dimensions were scaled from the tools in the original photo.

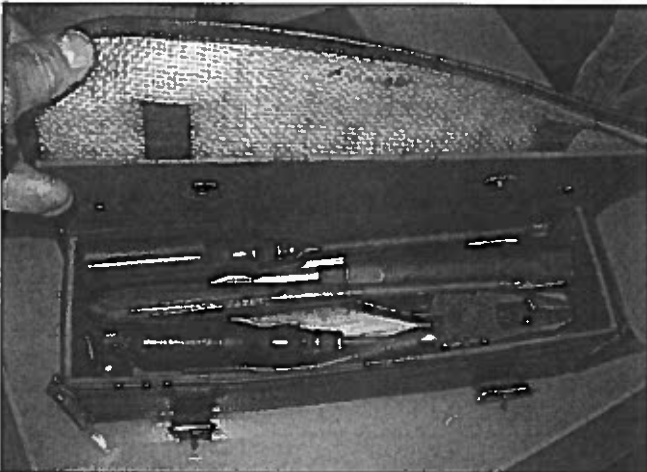


Photo 11 - Tools of either the 97H 2100 or AKF 1602 kits need to be packed very carefully in order to fit within the box dimensions. In this photo of an AKF 1602 kit, the large box spanner is the 1/2" x 9/16" BSF size, and you can see that its diameter, when compared with the width of the pliers jaws, is much larger than the diameter of the larger box spanner shown in the BMC publicity photo.



AKF 1602 (was 97H 2100)

Supplementary Tool Kit in waterproof canvas carrier bag containing:

- 1 - Hammer, 1/2 lb. Ball Pein
- 1 - Pr. Pliers, 8", side-cutting
- 1 - Screwdriver (Wooden-handled)
- 1 - Screwdriver (Phillips-headed) 8" (wooden handled)
- 1 - Screwdriver (Phillips-headed) 10" (wooden handled)
- 1 - Adjustable Spanner, 10"
- 1 - Set Double-ended Spanners consisting of:
 - 1 - 1/2" x 7/16" A.F.
 - 1 - 3/8" x 7/16" A.F.
 - 1 - 1 1/16" x 1 1/2" A.F.
 - 1 - 1 3/16" x 3/8" A.F.
 - 1 - 1/4" Whit., 7/16" B.S.F., 7/16" Whit., 1/2" B.S.F.
 - 1 - 3/8" Whit., 7/16" B.S.F., 7/16" Whit., 3/8" B.S.F.
 - 1 - 3/4" x 1 1/16" A.F.
- 1 - Box Spanner, 7/16" x 1/2" B.S.F.
- 1 - Box Spanner, 1/2" x 3/16" B.S.F.
- 1 - 6" Tommy-Bar
- 1 - Drain Plug Removing Tool, 1 1/16" A.F. (hexagonal)
- 1 - Drain Plug Removing Tool, 1 1/16" A.F. (hexagonal)

Photo 10 - BMC photo of the improved AKF 1602 Supplemental Tool Kit.

Note that the large box spanner in the photo is smaller than a 9/16" x 1/2" BSF one, suggesting the description should read 9/16" x 1/2" AF instead.

A Glossary of terms and abbreviations used in this article:

ENGLISH (UK)

TERM

AMERICAN DESCRIPTION

Spanner

Wrench

A.F.

Across the Flats - a 1/2" AF English spanner size is the same as a 1/2" American wrench.

B.S.F (also BSF)

British Standard Fine thread. Bolts and nuts in BSF sizes are a bit too large to fit any American wrench size. These fasteners fit British Whitworth spanners.

Whit (also W) than

British Whitworth thread. A 7/16" W spanner also fits a 3/8" BSF bolt. Note that the BSF size designation is 1/16" larger than the corresponding Whitworth size. Many British spanners will be marked, for example, 1/2" W 7/16" BSE, or other similarly related sizes.

Tommy bar

A rod used as a handle in tube spanners

Ring spanner

An American box wrench.

Tube spanner

We would think of this as a deep box wrench. Typical use is for removing and installing spark plugs.

Adjustable spanner

We would call these adjustable wrenches or crescent wrenches.

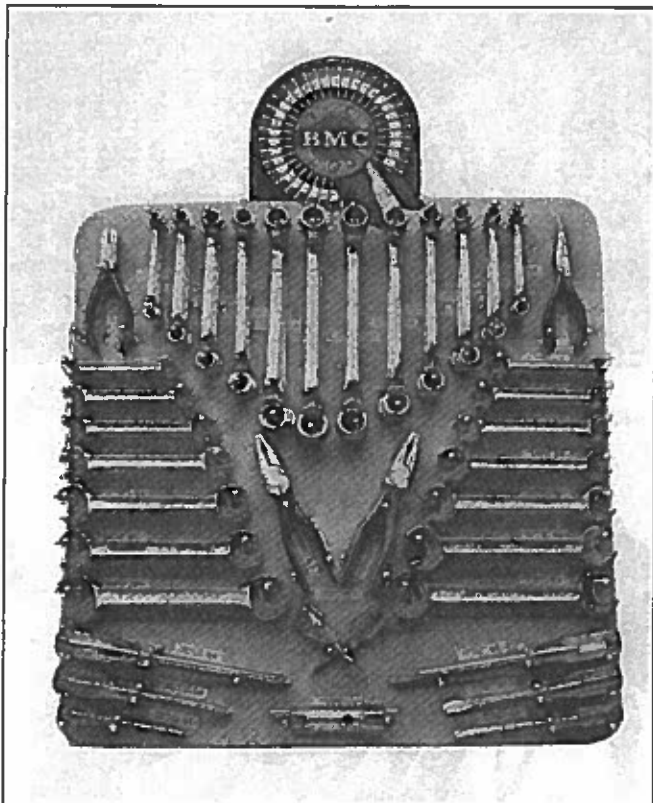


Photo 12 - BMC photo of tool display for dealerships. The B&W photos we worked from to recreate this display were typically about the size you see here.

To add even more variety to tool kit offerings, in the October, 1966 BMC Service Limited News Review (a BMC internal publication) there is an article an improved version of this tool kit, with a new part number AKF 1602. The difference from the 97H 2100 kit consisted of replacing the wire Phillips screwdriver with two wood-handled ones. In comparing the BMC photos of these kits some minute differences in details of some items have been found (e.g. hammer head, box rivet color), which made trying to come up with an exact duplicate of the original a bit more challenging.

More Tools From BMC Dealerships

Finally, BMC books containing extensive listings of approved accessories also described a large range of individual tools available for purchase from dealerships. In the BMC Salesman's Guide to Approved Accessories from around 1961, mentioned above, there also was a small black-and-white photo of a display board for some of these tools. This photo also appears in BMC internal newsletter publications. Drawing on this information and my friend Neil's memory of what these boards looked like at his father's BMC dealership years ago when he was a young lad, I recreated the board shown in the accompanying photo. Remember, the tool selection was intended for vehicle owners more than professional shops, and thus appears fairly basic and limited. Still, it also provides yet another glimpse into the state of British motoring and automobile ownership some 50 years ago.

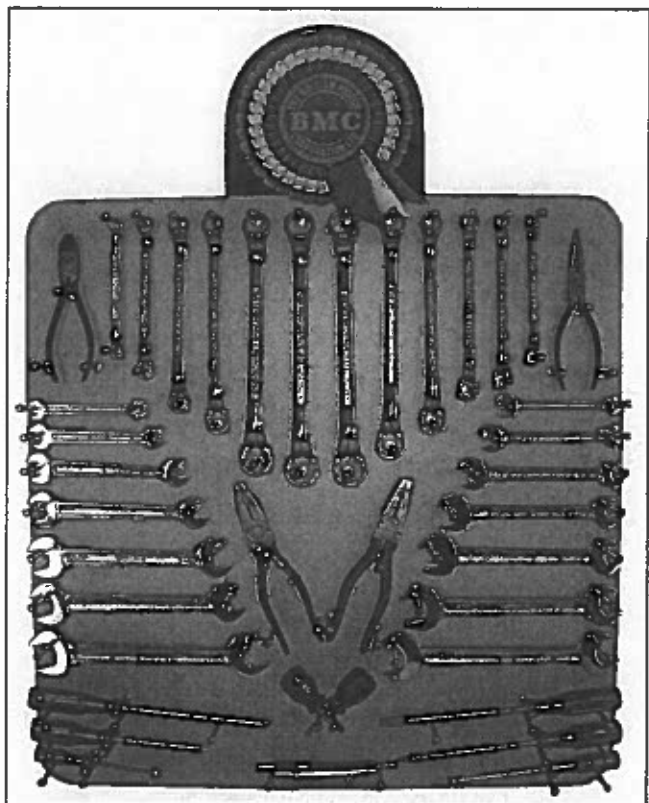


Photo 13 - Recreation of BMC tool display board. Colors were determined by what my friend, Neil, remembered years ago at his father's dealership.

Correction and Addition to Part 1 on OEM Tool Kits

Part 1 of this series on tools went to press before recent additional research on tool bags supplied with 6-cylinder Healey tool kits that brought some significant information to light. As a result, the tool bag shown in Photo 23 for 100-six and earlier 3000 Mk I tool kits actually belongs with the tools shown in Photo 27, and visa-versa.

I am adding here what we are currently aware of on this topic, and welcome photos of original tool bags from early BN4s and 3000 MK Is built after June, 1960 to help fill in current gaps in our knowledge (e-mail to: Rmoment@comcast.net). A couple of other corrections regarding hammers and jack are also noted.

100-Six and 3000 tool rolls

There were a series of tool rolls/bags supplied with OEM tool kit items in these Healey models. We don't have pictures of all of these bags, but do know what two of them, 2A 5412 and AHB 8983, looked like. (Pairing of the bags with their tool kits is reversed in Photos 23 and 27 of the OEM Tool Kit article - Austin-Healey Magazine, Nov.-Dec. 2011)

Bags 2A 5412 and AHB 8983 are simple rectangular pouches made by seam-welding black plastic material and both have

Tool Kits, BMC Supplemental Tool Kits

two ties of the same material, each attached to the bag with circular "dot" welds. Bag 2A 5412, used with 100-Six and early 3000 Mk I tool kits (up to around June, 1960), is 24 inches long and the flap has a cut edge. The AHB 8983 bag, introduced at the very end of Mk I production around March, 1961, is 19 inches long and the flap edges are folded over for about 1/8 inch and fixed with seam welds. "Dot" welds are also used at the ends of the bag pouch openings.

Hammers

There also are errors in the date ranges for knock-off hammers supplied with Healey 100 tool kits. The hide-hide hammer

changed to the lead one around August-September, 1954, rather than October-November, 1954, and the lead one was replaced with the copper-copper hammer in late November or early December, 1955, instead of July, 1955 as stated in the OEM article.

Also, the Thor patent for attaching head faces may have expired around 1964, as a 5000-mile Phase I BJ8, built in early 1964, had a Thor copper-copper hammer with the first style head, marked with the 501310 patent number on it. I suspect that the change to the second head markings with Ref 310, instead of the patent number, took place later in 1964 or maybe early 1965.

Table of tool bags used with 6-cylinder Healey models

Healey Model	Date Range	BMC Part No.	Comments
BN4	8/56 - late '57 or early '58	2A 5413	Tool bag, complete with two 2A 5414 "Tape"
BN4, BN6, 3000, Mk I	late '57 or early '58 - 6/60	2A 5412	BN6 & later BN4 tool Bag part number - BN6 production started 3/58
3000 Mk I	Part No. change around 6/60	11H 169	New part number for the same bag
3000 Mk I	6/60- 3/61	AHA 5506	Tool Bag: Introduced when 3000 Mk I tool kit size was reduced
3000 Mk II, BN7, BT7, BJ7 & Mk III, BJ8	3/61 - end of BJ8 production	AHB8983	Also includes last 25, or so, 3000 Mk I's

Knock-Off Hammers for Austin-Healeys BN1 thru BJ8

By Roger Moment, Rocky Mountain AHC

Knock-off hammers are a) a necessity for wire wheel cars, b) a part of the original tool kits that came with Healeys fitted with wire wheels, and c) changed over the period of production, both in style and manufacturer. Having an interest in the history of automotive production during the period when our cars were built, as well as Concours, originality details, and original tool kits, I started looking into some of the questions that, until now, remained unanswered. My focus was on the lead knock-off hammer supplied with many of the Austin-Healey 100 BN1s from mid-1954 through late 1955 (including early BN2s). However, as the number of my written and telephone contacts with people at Thor Hammer Co. grew, much more information came to light that tells an additional story about manufacturing changes and parts suppliers during the 1950s and 1960s in England. I learned that what I thought was an original 100 lead hammer wasn't, where this one might have originated from, and a whole lot more about Thor hammers. This led me to pursue

my original quest (on lead hammers) through other means, and the result turned out to be successful. Though people preparing cars for Concours will certainly be interested in what I learned, other Healey owners might be interested in this historical stuff as well. And for sure anyone having an old "ratty" original hammer lying around their garage, which they might not have interest in keeping, will be able to help find it an appreciative home.

This article first describes the hammers that we know about and what the parts books list for inclusion in Austin-Healey tool kits. I then summarize what people might use for substitutes if they can't find originals and include a table of this information. A number of photographs of original and alternative hammers are also presented, though obtaining a good image of head markings from a black hammer leaves a bit to be desired.

The Story

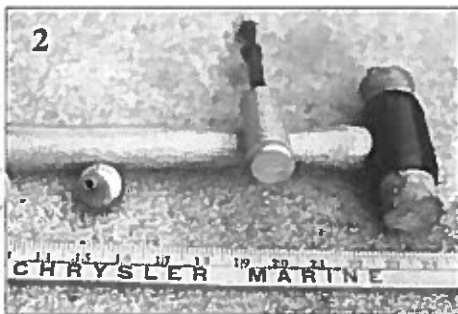
Over the past year I have been researching the lead hammer specified in the parts book for inclusion in many of the 100 tool kits. The only lead hammer that, up until recently, has been suspected of being the

original type was the one found in my 100, BN1L 223867, built in July 1955. We, of the Concours Committee, have been searching for another original lead hammer to confirm the design, but to no avail.

During the course of chasing leads, I had a number of communications with people at the Thor Hammer Company. In addition, I examined a number of photographs taken of documented original tool kits (from both before and after the period when lead knock-off hammers were supplied) and confirmed details through phone calls to their owners. Though my quest for information began focused on the lead hammer for a specific arrange of 100s, I ended up learning much more about all the knock-off hammers supplied by Thor, both prior to and following use of the lead one.

The results of all this have shed much light on not only the lead hammers, but also the hide, and other knock-off ham-

Hammer photos on this page and opposite page: 1. Thor size 1 Cu-Cu hammer included in tool kits starting with BN2 #229653 (late 1955) and continuing into 1962. The BMC part number is 11B 5166. 2. Hide-hide hammer from BN1L 147371, built Nov. 9, 1953. The BMC part number is 3H 3128. Some original hide hammers from cars built in 1954 have been seen with one hide and one Cu face. The Nubrex grease gun and adapter (also shown) were included in early BN1 toolkits. 3. Thor size 1 Cu-Cu hammer used from 1962 to approximately 1965. Note the two sides of the iron head are marked differently from each other. The BMC part number remained 11B 5166. 4. The Simmons "lead" hammer that replaced the Cu-Cu one in BJ8s (exact change point unknown - I suspect it was in 1965). The BMC part number is 88G 329. This exact hammer, made by Simmons, is still available today. 5. An exact reproduction of the hammer shown in Figure 2, along with a lead Thor hammer (the one with the tapered head) of similar size that is currently available today (item #26-7742). End view shows typical British locking wedge.



mers, including the Cu-Cu ones furnished from late 1955 through 1964, i.e. with most Austin-Healeys. This information will affect judging in concours, so it is being presented now (rather than waiting for the next Concours Guidelines update) in order to let owners know in as timely a manner as possible what hammers ought to belong with which cars. These findings could also be of value to other non-concours owners who might encounter some original hammers and want to hang on to them or find them "homes" with concours car owners. Certainly, if you have some old mashed hammer you've been saving, and it could add to the story, I would appreciate your contacting me.

BN1 cars

Chassis 138031 – 159256 ? Hammer (hide) 3H 3128

This hammer is not so unknown. Three excellent original examples have been found. With Chassis 147371, Body 691, the iron head has rawhide inserts/faces on both ends that are 1.5" in diameter. The head is plain on both sides and has no markings.

Chassis 152469, Body 2091, also has a hide-hide hammer of the same apparent size. However, it has a recessed numeral "1" in one side of the iron head.

The hammer that came with chassis 152760 is Cu faced on one end and rawhide on the other. It has a recessed numeral "2" on one side of the iron head and PAT 501310 in large, recessed characters on the other side.

Chassis 159257 – 229652 ? Hammer (lead) 1B 8996 (note that this range includes early BN2s!)

The only lead hammer that had been found up 'till now and was suspected to be original has an iron head with a lead slug cast onto one end and a rubber cap on the other. People at Thor say this was not made by them and doesn't look like any other hammer of English origin. They said it did look like a hammer that might have been made in Germany in the 1950s. This hammer was with my car from a few months after it was new. The car was delivered to a US serviceman in Dusseldorf Germany and sold to the previous owner before me about a year later. This hammer was with the car. Given what the people at Thor say, it is possible that the serviceman bought the lead-rubber hammer while he was still in Germany to replace the original lead hammer that might have not held up very well.

Another early owner of a BN1, chassis 220849, bought the car in '57 or '58 from the original owner. He said that his hammer had a cast lead head, but that he used it only once to remove his knockoffs, which were rather well stuck on. It became so totally deformed that he threw it away. If this experience was typical of owners of these hammers, it might explain why the original one in my car was replaced (with the lead-rubber one) and why no others have been found.

Another story related to me by John Wheatley tells of an engineer at Longbridge who was asked to help an owner. Seems there had been reports that wheels had been coming off of 100s so he went down to meet with one of the complainants. When he asked to see the hammer the fellow was using to tighten the knockoffs he said he was shown a "puny little lead one" that maybe weighed a pound or so. After sorting out a solution with the owner the engineer then spoke with Austin people and learned that they put in the little lead hammer as a cost saving measure.

Only one definitive photograph of an original lead hammer has been located. It is a photo of the 100 tool kit, laid out

Dash is cut away for knee room. Choke's under heater.

Luggage compartment is roomy, spare tire stores high.

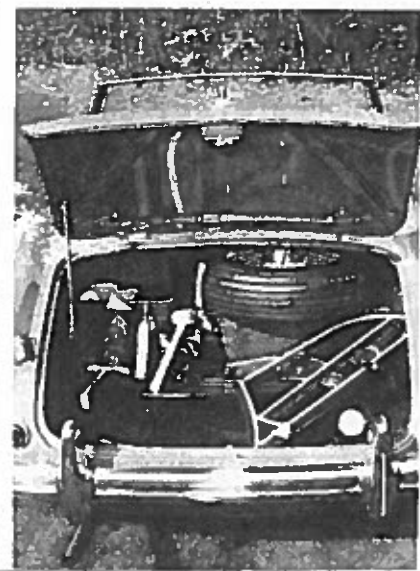


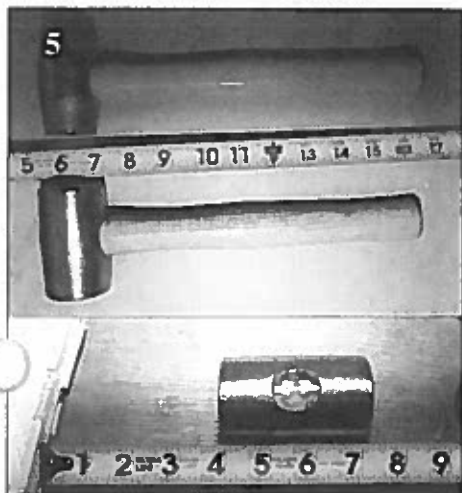
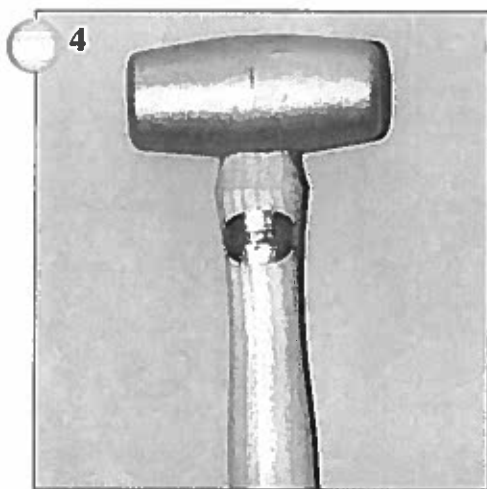
Photo of original tool kit from late 1954 or early 1955 showing cast lead hammer. The BMC part number is 1B 8996; from chassis 159257 – 229652 (note this latter number is after the start of BN2 production

in the boot of the car, and the knock-off hammer is obviously a solid lead head type. The car is from 1954 as it has the reflector pods and the second style of side curtain. The photo appears in a Hillman publication titled "Up-to-Date Manual of Road-Tested Sports Cars" dated 1955. Though the tool kit photo is fairly small, since the hammer is positioned directly next to the grease gun it is possible to use that for scaling and thus obtain fairly good hammer dimensions. Based on this scaling, the head appears to be 1 7/8" in diameter at its center, 3 1/8-3 1/4" long, and cylindrical in shape. Discussions with my contacts at Thor indicate that the head likely had some slight taper to assist with de-molding, so based on this I would guess the face diameters to be approximately 1 13/16". The exposed handle length calculates to be about 9". No label is visible on the handle.

Finally, the original owner of BN1L 222313 has sent me photographs of his original lead hammer. The handle has been replaced, and the mushroomed head ends have been cut off. But it is possible to obtain the virtually cylindrically-shaped head diameter and this has been confirmed by direct measurement at 1 7/8."

BN2-BJ8

Chassis 229653 on ? Hammer (copper) 11B 5166



This hammer was introduced in early BN2s and continued into the BJ8s. It is a size 1 Thor hammer with iron head and two 1.25" diameter Cu faces. The BJ8 parts book shows a part number change from 11B 5166 to 88G 329, which we know to be a small hammer with cast lead head made by Simmons. We don't know when this change occurred, but suspect in 1965 or 1966.

Thor Hammer Markings

Before listing acceptable hammers for use in tool kits of concours Healeys, a brief digression into the history of Thor hammer head markings is necessary. When

Thor was making copper-faced hammers back in the 1940's, they were awarded a patent, No. 501310, having to do with the manner in which the Cu face was held into the iron head. An early hammer on which this number appears has it in recessed characters (as if stamped into the surface). In the mid-50's Thor changed their iron head design and the new style had PATENT 501310, THOR, and MADE IN ENGLAND in raised characters within a recessed area. These markings were identical on both sides of the head. This head was used with both Cu-Cu faced hammers and Cu-hide faced ones, in at least two sizes – with 1.25" diameter faces

and 1.5" diameter faces.

The patent ran out in the early '60s and in 1962 the iron head casting was changed again, removing the "PATENT 501310." The two sides of the head were now different and read as follows:

For Cu-Cu hammers — with 1.25" dia. faces: SIZE 1 REF 310, THOR, COPPER HAMMER on one side, and MADE IN ENGLAND, THOR HAMMER COMPANY, SHIRLEY BIRMINGHAM on the other. With 1.5" faces the Cu-Cu hammer would have Size 2 REF 312 on the one side and the same MADE IN ENGLAND etc. on the other (this size Cu-

(continued on page 28)

Knockoff Hammers					
Application	BMC Part No.	Type (parts book or documented)	Markings	Options	Sources
BN1 C. 138031 – 159256	3H 3128	a) Iron head, two hide faces, wooden handle, size 2, iron wedge, (brand unknown) b) Thor size 2 Cu-hide	Plain, recessed "1" or "2", PAT 501310 (patent number on Cu-hide type only)	a) Modern Thor size 2 hide-hide. This has a raised "2" cast into one side of head b) Size 2 Cu-hide with: PATENT 501310 THOR MADE IN ENGLAND (Same markings both sides)	a) Thor Hammer Co. b) Old original hammer.
BN1 – early BN2 C. 159257 – 229652	1B 8996	Cast lead cylindrically-shaped head, wood handle, iron wedge. Head 1.875" diameter at center and approx. 1.840" diameter at the faces. Head length about 3.125 – 3.250". Handle approx. 9" long (exposed length).	None known of. So far, the manufacturer is a mystery.	a) custom fabricate b) Thor #26-7742 lead mallet.	a) Handle and wedge from Thor. b) Thor Hammer Co. Ltd. Ph. 011-44-121-705-4695 Highlands Road Shirley Nr. Birmingham B90 4NJ England
BN2 229653 – BT7/BN7 up to 1962	11B 5166	Size 1 Thor, iron head with two 1.250" dia. Cu faces, iron wedge, wood handle	PATENT 501310 THOR MADE IN ENGLAND (Same markings both sides)	Same Thor hammer with later style markings (see post 1962 to 1965)	Thor Hammer Co. or Moss. New hammers will just have a "1" cast into one side of head
BT7/BN7, BJ7, early BJ8 (into 1965)	11B 5166	Size 1 Thor, iron head with two 1.250" dia. Cu faces, iron wedge, wood handle	SIZE 1 REF 310 THOR COPPER HAMMER (on one side) MADE IN ENGLAND THOR HAMMER COMPANY SHIRLEY BIRMINGHAM (on the other side)	Same Thor hammer with most current marking (a plain "1" cast into one side of the head)	Thor Hammer Co. or Moss. New hammers will just have a "1" cast into one side of head
BJ8 1965 on (exact change point is unknown)	88G 329	Cast lead head, iron wedge, wood handle	Stick-on label reads: SIMMONS SOFT FACED HAMMER HEADFAST PAT – APP – FOR COVENTRY	This exact hammer is still available today	1 lb. Simmons lead hammer –available thru Moss – part No. 386-020