



Dear Andover Norton Customer,

After a long, warm and sunny summer I currently look at cold and rainy autumn weather through the window. Perfect for projects I meant to do but decided to instead spend the time outside. Hence "The Source" late in the month!

So what is new?

### **The Norton Donington Disaster**

The latest documents out from the liquidators BDO show that Garner's recent bold statement that all pensioners whose money he "invested" will see their money and interest back contains about as much truth as most of his statements over the last decade or so. Financial observers don't believe they will see much, if anything.

TVS, the buyers of the Donington IP, are still in the process of sorting through the leftovers. Predictably and sensibly they have started by cleaning up the Norton Trademarks, taking over those that were surreptitiously obtained by an outsider many years ago. In our communications with their lawyers it became obvious that the records they found are either incomplete or chaotic, most probably both.



That said, Andover Norvil parts are now the only production racer parts made and sold by a proprietor of the "Norvil" trademark.

### **The Andover Norton Calendar**

New? Yes, there were a number of these before, but the long tradition of them coming rather late has now been broken! It is due any day now. The other novelty is the inclusion of a few very nice Triumphs reflecting our recently introduced Triumph parts service for 500cc to 750cc Twins.

We will be contacting our winning entries shortly!



**Andover Norton International Ltd.**  
**2021 Calendar**



***Above: All roads lead to Andover!***

The calendar is part# 13.1789/2021 and price as before £9.95

## **Gift Voucher**

Our MD Karl had the idea that, for Christmas and other special occasions, customers' relatives and friends will probably want to give them gift vouchers so they can decide what parts or accessories they want or need. In time for the pre-Christmas period we therefore introduce the voucher below:



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## **The new Generation “Original Style Baffling” Silencers**

Our baffled silencers have now been on sale for a few months and have found grateful customers in those who think that their bikes are too loud. As a matter of fact I wanted “stuffed” silencers for years but, as you can imagine, no chromium plater is keen to handle them because they must be plugged before they go into the bath, a labour-intensive and potentially risky process. At last we found a manufacturer and a plater who tackled the task.

Apart from the reduced noise, how do they affect performance? My friend and **THE** German Triumph Guru Joerg Winkelmann has recently had the first set of our 38mm (1.5") inlet silencers for a customer's bike and decided to test them on his personal, breathed-on T140 first.



***Above: The "Winkelmann" Triumph***

After the test ride he rang me and wanted another pair for his customer to keep this pair on his personal bike. He reported exhaust noise was significantly reduced and, even more to his taste, the bike vibrated less and if anything felt livelier and more powerful.

His comment: "The new Roadster Silencers at last with baffling and excellent finish. The disadvantage is higher weight of 400 grams per silencer which means 800 grams for a twin and, due to the higher weight, a possible decrease in acceleration."

### **Bronze Valve Guides (Norton and Triumph)**

I recently had a phone call from the Andover sales counter. A Triumph customer enquired about our valve guides, questioning why inlet and exhaust were identical.

Our current valve guides for Triumphs carry on with the design my old source Ed Rowe came up with. He sold the guides for Triumph 650 and 750 twins in one shape only and given all Triumph specialists we supplied found them very good in use, that is what we did when we started machining ours after Ed Rowe retired.



**Triumph**



**Norton 750 Inlet**



**Norton 850 Exhaust**

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The difference is in the material which is a better bronze alloy. We offer the guides in standard and oversize OD which is necessary if the valve guides were changed several times, or if an amateur drove them out without first removing the residue forming on the part of the guide that reaches into especially the exhaust port.

For Nortons we offer the same material, advisable for racing and tuned engines as they offer better heat transfer than the cast iron guides plus better emergency running properties, but in fact my Norton engine Guru Rudi uses them on all engines he rebuilds! For Triumphs you find the guides in the normal Model engine pages, for Norton in the "Go Faster Goodies" Section.

### **Our new Packing**

We hear the "Friends of Andover" on social media claim our new paper-based packing that now gradually replaces our plastic bags was a cost-saving exercise. Rest assured it is not. In fact the new style paper packing is a bit more expensive than plastic. Our motive is solely to care for the environment, not cost-cutting.

### **Ashley on Tappets**

There is word on the social media platforms that our new special alloy tappets are not suitable and seize in the tappet tunnels. 35 hours of testing had been conducted prior to sale and this condition was not encountered. One engine builder has experienced this problem, so at the moment it is one incident which I will explain in detail below.

The alloy is Cobalt / Chrome, has good wear characteristic and a hardness of 52-54HRc. This hardness range was selected to try and suit all cams and to ensure that one part will wear quicker than the other. This is normal as you can't have the luxury of both parts never wearing out. Metallurgy has not yet perfected that.

The engine builder could not fit the tappets into the used barrel they were intended, so they were tried in other barrels he had in the workshop. They slid in nicely, so it was assumed that the barrel had undersize tappet tunnels, not unusual as I have seen one and heard of two other barrels in the last years. One was 0.005" undersize.

The tappet tunnel dimensions were supplied and the tunnels honed by an automotive engineer so that the tappets slid in. The engine was assembled and the bike ran for less than ½ mile when the tappets seized. The engine was stripped and the tappets fell out of the tunnels, so the engine was rebuilt and the engine did the same again but this time the tappets remained seized in the tunnels. The tunnel was machined oversize and oversize tappets were used. The

barrel could not be examined at ANIL as I was on holiday.



**New tappets - One casting.**



**Old type - Composite Construction.**

So what went wrong? Some have questioned the expansion of the new alloy. The expansion of this new alloy is 0.0001" more than the cast iron tappets at 108 C, so not enough to explain the seizure. This now suggests that clearance could have been an issue. From the drawings it can be found that tappets are of 1.185/1.186" diameter, the tappet tunnel is 1.1865/1.1875. From this you can see that the tolerance varies from 0.0005 - 0.0025".

This suggests that the max clearance is 0.0025" but what is the minimum clearance? 0.0005" is way too low for a the length of the tappets running in a bore. From the figures the max diameter tappets would measure 1.186" in a max diameter bore of 1.1875" suggesting the minimum clearance is more realistic 0.0015" With the new German precision made tappets I have managed to get them to slide into a new tappet tunnel and not be able to get a feeler gauge down the side of them. Just because the slide into the tappet tunnel does not mean they fit correctly, they need clearance and from the drawings the figures obtained then there must have been fitting instructions in the factory during the 60' & 70's - what was it they used? I contacted two ex-employees from that period and neither could remember anything, but there must have been something - the numbers above indicate that.

I conducted some testing here, first put tappets with unknown clearance in new barrel with no oil, use heat gun and heat tappet tunnels from outside to 108 C, the tappets did not seize. However, heating the tappets and then trying to put them into a cold barrel makes them hard to insert, after a second or two of heat transfer they go in as the heats conducts into the wall of the tunnel. This would explain that when the bike is stationary and is warming up

the barrel and tappets warm at a similar rate, once cool air flows over the barrel then it will contract slightly and thus the need for clearance. It makes sense that just because a bike is stationary and at tickover it may sound like they are worn. This may not be the case when underway. In similar applications in the automotive world the clearance used is 0.002" with a wear limit of 0.006" and that is in water cooled engines.

Considering that oversize tappets are fitted, how do these function. Another engine builder who fits oversize uses a clearance of 0.002" when installing them. This differs from the machining dimensions that I gave the engine builder. Tolerance drawing dimensions are not clearance dimensions. Most who fit tappets to a used barrel may have been just lucky, the wear in the tunnels was enough to achieve the correct clearance. It makes sense to always check the clearance no matter what barrel you install new tappets in.

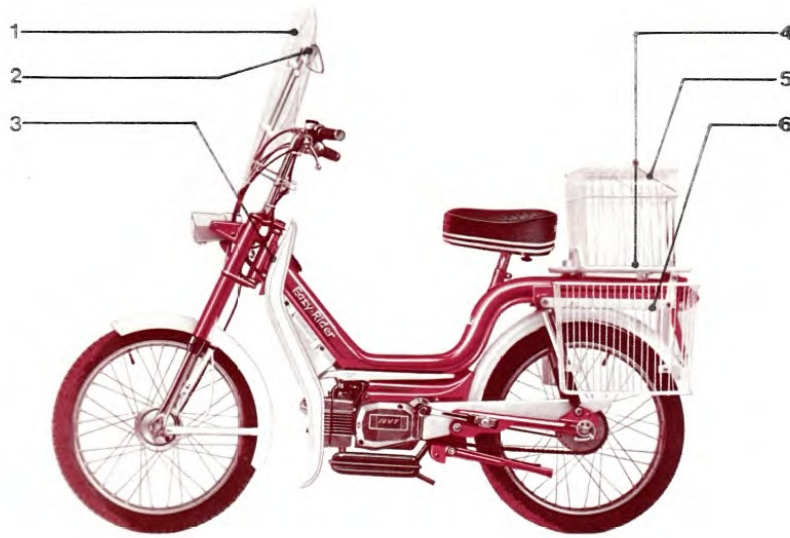
The options open to ANIL was to either carry on retailing tappets adjusted to the bottom dimension, or to carry on retailing with them in tolerance. To adjust tappets to bottom dimension would have been expensive, time consuming, risks a higher rejection rate, and when fitted in a used barrel a reduction in life due to increased clearances. We decided to retail the tappets in tolerance and with an instruction leaflet on how to check the clearances and how to install them. I can't do that here as I don't have your barrel!

We certainly hope this gives more detail to what is on social media. We want the bikes built to be reliable, and thus ridden more often and further. As always, I am available to contact if you have further queries, but I can't disclose any more on the alloy that they are made from. This belongs to the manufacturer who are keen to use the casting and machining knowledge they have gained in other areas of industry.

## **Phil Albutt's Rocker Years**

The recent acquisition of an Easy Rider moped by Andover Norton reminded me of my own two wheeled experiences.

As one of the non-motorcycle riding fraternity within the company I can proudly boast to having ridden an Easy Rider moped. This was during my time with BSA Co. Ltd at Blockley, Gloucestershire. The local village Post Office had terrible parking, as a visit to any small Cotswold location will confirm, and the company's moped, equipped with wire panniers and top basket, original equipment of course, was loaded with the day's despatches and we took turns to ride to the local post office to post the orders. Difficult in the rain, as the panniers and top basket were only made of wire and we used plastic bags on those days to keep the parcels dry. Not being a motorcyclist myself, a helmet was obtained for me. A full-face type, and at just over 6 feet tall, and a bit lighter than I am now, an odd sight I am sure.



***Above: The “Easy Rider Full Dresser”. Now imagine our Phil in his leathers c/w “69 Club” patches, hung with metal badges, and his helmet on, the baskets full, him flat out roaring through the rain to the Post Office....***

I also rode a 50cc Jialing moped to test ride it. BSA wanted some miles racking up on a demonstrator model. I lived 13 miles away and had to refuel every trip and a half and did so for a few days. Same helmet, same height. Had some keen looking cyclists following one day, who thankfully turned off before they caught and possibly passed me.

There are some steep hills around Chipping Campden but the little thing climbed steadily. A colleague rode in from Cheltenham too with it, and he had to carry a spare can of petrol to make the return trip home. He was a motorcyclist and his partner, who worked in the office, rode pillion.

### **Simon’s Bit**

#### **Running a Norton Commando 750: 3 year/10,000 mile report**

Riding home from work in Summer 2017 I noticed the speedo on my 1973 Commando Roadster 750MkV about to click over to 60,000 miles. I was on a quiet road so pulled over onto the grass verge to take a photo. Three years later I repeated the exercise at 70,000 miles.



I checked my records and have listed below the repair and service work required in those 10,000 miles. (I acquired the Commando in 1988 with 16,000 recorded miles).



How do my experiences compare to those of our newsletter readers? Please send us your Norton riding reports.

Mileage	Date	Activity
60,644	Sept 2017	Minor engine rebuild: measure cylinder barrel and fit new piston rings (standard size). Drain and replace engine oil. Balance carburettors. Check and adjust valve clearances.
61,477	Sept 2017	Drain and replace engine oil and filter. Repair speedo drive gearbox using parts from another one.
		Miles travelled in 2017: 2,650
61,650	April 2018	Fit 230 main jets (replacing 260 ones). Obtain new MOT certificate.
61,690	April 2018	Fit new rear drive chain
62,151	April 2018	Replace one standard 2mm clutch plain plate with thicker one (3mm) to lighten clutch action. Drain and replace primary chain oil.
63,025	May 2018	Drain and replace engine oil
63,100	May 2018	Fit new speedo cable
63,900	May 2018	Fit new tacho cable
64,551	July 2018	Dyno test. The bike is fitted with twin Premiers, 17 pilot jets, needle in position 1 and 230 main jets. At full throttle the fuel/air mixture was tested to be just right. At mid-range it was running slightly (but not significantly) lean. The tester said I could try the middle notch, although he thought a performance change would not be noticed.
64,680	Aug 2018	Fit new clutch cable
64,800	Aug 2018	Drain and replace gearbox oil
64,900	Aug 2018	Fit new front brake pads
		Miles travelled in 2018: 3,934
65,584	Feb 2019	Drain and replace engine oil and filter. Check valve clearances. Oil swinging arm. Check cam chain adjustment.
65,910	Feb 2019	Tighten kick start pinch bolt
66,300	May 2019	Compression test: L = 10.1/4 bar (149 psi). R = 10.1/2 bar (152 psi)
67,754	Aug 2019	Replace rear tyre and inner tube following a puncture caused by a nail
		Miles travelled in 2019: 2,170
67,754	Mar 2020	Drain and replace engine, gearbox and fork oil. Fit new oil filter. Check valve clearances. Oil swinging arm. Adjust timing chain. Strobe ignition timing.
69,000	June 2020	Fit new spark plugs (NY7C). Check fuel/air mixture with a Gunson Colortune tool
69,612	July 2020	Repair cylinder head leak. A front c/head sleeve nut was found to be missing. A new nut would not tighten up so the head was removed and a thread insert fitted. The copper head gasket was annealed and re-used. Remove air cables and lever.
70,900	Aug 2020	Charging warning light stays on. Remove primary cover to check for possible disconnected stator (all ok). Drain and replace primary drive oil. The fault was found to be a dry joint in an alternator wire connector. Fit new front tyre
72,029	Sept 2020	Miles travelled so far in 2020: 4,275

That's all for this edition of the "The Source" so until next time!

The Team at Andover Norton



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