

Some pointers and notes re the building and assembly of our twin leader Norton front brake.

From time to time I assemble a batch of twin leaders but unfortunately the pressure of time and other commitments have always made it difficult for me to keep them in stock.

We have good stock of all the parts but its simply labour intensive. Following requests we have decided to supply them as a complete assembly in kit form for customer self build but stress that these require care, ability, fitting skills and a reasonably equipped workshop.

Please do not attempt a self build if you have not got all of the above but assuming you have then you should be able to create an excellent addition to your Motorcycle for a very reasonable price.

I have tried to edit and condense my build notes to create an outline of the work required but its not mass production.

Much time should be spent initially creating a clean working area then examining, cleaning and laying out the various Components, judging fits, checking the cams engage with the operating arms easily enough, check the 1/4" screws fit into the cams and torque pins OK, and the 1/2" thin nuts engage with the torque pins etc.

Occasionally a sharp edge may need to be smoothed.

Araldite, loctite, grease and perhaps some thin oil such as 3 IN 1 will be required.

Check the fit of the stainless exit perforated plates, sometimes a little trimming or light forming may be required in Order to obtain a good fit, then thoroughly de-grease both brake plate and exit plates and Araldite the plates in place, (be sure to place the shiny side out) Put to one side and leave glue to set.

Once set the bushes need to be presses in, A of soft alloy mandrel will be handy, fit the longer bushes to the inside.

The hammer drive screws should then be used to fit the air intake, A little Araldite or loctite could also be used if necessary but would not normally be required. A nail punch would be useful to help keep the screw square but an alloy rod or bar could suffice.

The fit of the cams in the bushes should now be checked, if the bushes are fitted carefully the cams should be fine.

We carefully press the bushes in using a fly press and an alloy mandrel (some twin leaders are not bushed ours use the original Norton sintered bushes and therefore could be re-bushed should the need ever arise)

We check the fit of the cams in the bushes, for good operation they should be free from any wobble or slackness but At the same time no binding. If carefully pressed in with a mandrel, all good and true everything will be fine, if tight the high spot would have to be removed, the procedure would be as follows...

Enter the cam and rotate vigorously, examine both the cam and the bush for witness marks, identify the tight spot, (Almost certainly at the outer end of the bush from where it has been pressed) carefully scrape with a sharp flat edge, clean, check, repeat until correct.

The pivot pins can be pressed into place, be sure the flats on the torque stop align with the slot in the slider before fully tightening, loctite should be used on the nuts, an assistant, a good quality socket and a ring spanner will be required, along with a decent bench vice. The ring spanner is held in the vice, the assistant holds the plate square and true and you use the socket to do the tightening.

The threaded cable abutment can be pressed in and pulled in place with the 1/4" screw, again loctite should be used And be sure to have the cable aiming in the correct direction, a 5/16" U.N.F. Stud can be used as a pointing aid here. Lightly grease and fit cams, there are two thin shims I sometimes use to align the brake shoes better or assist rotation. Fit the shoes, again slightly greased on the cam face, fit the springs.

Turn the plate over and fit the linkage assembly, these often give the impression they are not going to fit but you Should of already checked that each arm fits to its cam and its just a matter of getting the length right, keeping it good And level and engaging evenly.

Pretty much last job is to fit the brake shoe retaining plates, I find that these are sometimes a little tight and I relieve The edges of the appropriate hole in the plates such that there is no "stiction". When happy all rotates freely (do a dry Run first) Fit the ¼ hex head screws using a drop of loctite.

This is not a complete of jobs and is not necessarily in the correct order, just a guide. Hopefully it will help but I am not very good at writing instructions that cover everything and everyone. It will take more time than you think.

Any suggestions or comments that may help others most welcome. Addendum.. The first recipient of one of these kits Has returned with feedback as arranged. He spent quite some time cleaning and checking components, removing any Burs or swarf. He put the bare plate in the oven at 110/120 degrees then the bushes pretty much pushed in by hand, just A light tap with a rubber mallet. Basically it went together with no problems but did take some time and you have to be Patient, all pretty straightforward (His words) He polished the plate up a little with solvol and thinks it looks really nice, I think once built just before fitting the linkages it would be possible to degrease the plate and with a bit of masking Spray paint it. I think an old fashioned black wrinkle finish would set the polished stainless linkage assembly off well.



TWIN LEADER FRONT BRAKE, COMPLETE LIST OF PARTS REQUIRED FOR CUSTOMER SELF ASSEMBLY

Description.	<i>Ground to .541" what is the fit of the shoes in the hub like?</i>	Part number
1 X BRAKE PLATE, Die cast, fully machined but totally bare and not Polished, customer to polish or paint or leave as is.		060000 3-7-14-R
1 X PLAIN PIVOT, STAINLESS		063273 3-6-10-1
1 X TORQUE STOP PIVOT, STAINLESS		063274 3-6-13-6
2 X CAMS, will be supplied with blended and polished cam face.		063272 3-6-13-5
1 X CABLE STOP, STAINLESS		060003 3-6-4-6
2 X BRAKE SHOE RETURN SPRINGS		060014 3-6-5-3
2 X 7/16 UNF ½ WIDTH PIVOT NUT, STAINLESS		067880 2-11-4-5
1 X INLET PLATE, STAINLESS		060020M 3-6-7-8
3 X POLISHED STAINLESS PERFORATED EXIT PLATES.		RGM0021 3-6-10-5
3 X ¼ FLAT WASHERS FOR TIE BOLTS, STAINLESS		050241H 3-17-10-6
1 X BUSH SET (4) (standard Norton, so can be replaced when worn).		067750K 3-6-14-5
1PR MZ GOLD BRAKE SHOES, Our own shoes, best their is.		060006 4-6-14-4
6 X HAMMER DRIVE SCREWS		RGM0787 3-6-13-7
2 X ½ WAVY WASHER, STAINLESS		050547 3-17-13-9
2 X SHOE LOCATING PLATES (To be re-designed)		WORKSHOP
3 X ¼ UNF X ½ BOLT FOR CABLE STOP ETC, STAINLESS		068075S 5-5-22-8
3 X ¼ LOCK WASHER FOR THE BOLTS ETC, STAINLESS		050238 3-17-10-8
2 X SHIM FOR CAMS (A.R)		T2080 2-10-15-18
1 X ARALDITE		610594 5-8-1-1
LINKAGE ARM'S AND ROD ASSEMBLY, STAINLESS. Supplied Polished and assembled, ready to fit. Consists of.....		050900D 3-6-4-5
1 X TIE ROD WITH LOCK NUT		Contents of 050900D
1 X L/H CLEVIS		060015S 3-6-5-4
1 X R/H CLEVIS Both forks nicely sculptured & Polished.		060018S 3-6-5-5
2 X CLEVIS PINS and E CLIPS		060019S 3-6-6-3
2 X 3/8 FLAT WASHER, STAINLESS		060552/3S 3-6-11-5
2 X 3/8 DOMED UNF NUT, STAINLESS		050197H 3-17-12-3
1 X FORGED OPERATING ARM LONG		060550S 3-17-6-3
1 X FORGED OPERATING ARM SHORT, Again both nicely shaped and Polished, not just lasered from a bit of plate.		060025 3-6-6-6
That should be A complete list of parts required to build a beautiful, twin leader.		060027 3-6-7-1
<i>Any feedback re difficulties, improvements, hints/tips most welcome.</i>		



RGM TWIN LEADER INSTALLATION & ADJUSTING NOTES

Thank you for purchasing our twin leader front brake.

We hope you find it a worthwhile and pleasing improvement.

The general fitting instructions should be obtained from the workshop manual, but in addition the following notes may be of use.

Be sure to clean out all the dirt, dust and corrosion from the brake drum and thoroughly degrease prior to fitting the new brake. Removing the wear ridge sometimes found at the entrance to the drum may also be necessary, this should be possible to do by hand using a round file and some emery, flap wheels are also useful.

The cable boss on our twin leader is threaded to suit the Commando front brake cable ie 5/16" UNF. Depending on your application it may be that your current cable may be the wrong length or have the wrong thread.

The twin leader front brakes are typically fitted to Nortons with 7 3/8" stanchion centres, it is possible to fit to earlier machines with 7" centre forks, or indeed non Norton machines fitted with Norton front wheels but you should check the alignment of the torque stop and the slider boss, both these areas can vary depending on current application. But speaking in general terms it should be possible to fit this brake to any Norton full width road going front hub.

In the event that the brake rod length requires adjustment this is achieved by slackening the brake rod lock nut, removing the top clevis fork pin and clip, and operating both cam operating arms to apply pressure, obviously an assistant is required at this point. With pressure evenly applied the length of the rod should be adjusted such that the pin will drop through the clevis fork. Refit the clip and tighten the rod lock nut.

When fitting the brake plates the shoe must be centralised, this is achieved by applying firm pressure to the brake lever and maintaining pressure as the front wheel spindle is tightened.

The brake cable should be adjusted such that the wheel spins freely with the minimum of movement on the lever.

The brake should be used gently for the first few hundred miles or so to allow the shoes to bed in.