The First Name in Special Equipment—unequivocally the acknowledged master of this booming trade. You name it, if it's special equipment for big twins, Paul Dunstall has it. But it's unlikely to be sitting there collecting dust, because wherever motorcycles are ridden or raced, people in the know are busy licking stamps, and sending lists of urgent wants to Britain's special equipment king. So the "Paul Dunstall Motorcycles" shop front, of modes appearance and proportions, hides a thriving, hustling organisation. During a typical working week, hundreds of items will be cleared from the shelves, packed and dispatched—quickly, efficiently—to dozens of different countries.

What is special equipment? Different things to different people. Some people think only in eyeable values. An embellishment—and that's that. Right, a single Dunstall item will certainly enhance the appearance of its designated model. Although Paul Dunstall is not in the skin-deep beauty business, he won't include drab-uglies in his lists. The Dunstall philosophy demands that components must be correctly designed, well engineered and properly finished. If light alloy is necessary from a design point of view, then light alloy it will have to be. If one item is designed to improve performance, the next must be absolutely complementary. The entire build-up of components must be balanced and co-ordinated.

Dunstall components really make things fly. Their development background of exhaustive track testing, endows them with the built-in ability to GO. Any tougher proving ground than road racing circuits would be difficult to devise.

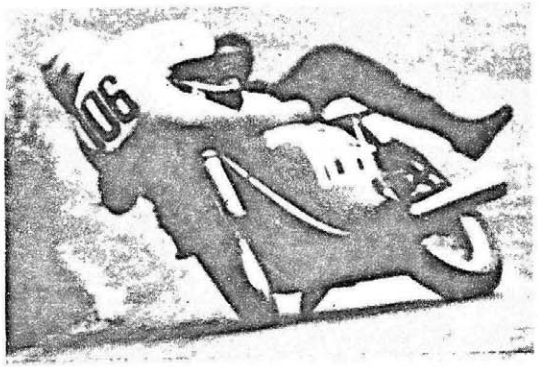
Winning races isn't everything of course, but it helps to speed up development, and most important of all, it proves reliability. This is because you not only need the fasted machine to win, but it also has to still be there at the finish.

Dunstall machines were first past the post 17 times in 1968, with three lap records thrown in for good measure.

The new Dunstall Road Race Camshaft taking shape on the drawing board.

Tension builds up before the start of a big race, the 1968 Hutchinson 100.

Race seasons come and go; the cheering, the excitement, the glory, and the back-slapping stop: even memories of hard earned records fade. That's only to be expected, but the end product of Dunstall racing—the real justification for Dunstall racing—remains. Simply, racing to provide effortless high speed motorcycling for the discriminating buyer anywhere in the world. That's why the Dunstall stable races only what it produces, catalogues and sells. Why, even the 'Year of Protest' saw no angry demonstrations against his TT Victory. Of course not, because the basic Dunstall package automatically includes all the obvious go-faster equipment, plus a number of race-bred components and refinement. It's worth remembering that Paul Dunstall's "works" racers are no one-off exotics, unless all of his products are classified that way. You can obtain similar results through step-by-step Dunstallization with off-the-shelf components. The tuning article in the centre of this catalogue will give you a hand in the right direction. Now it's up to you—with the help of the right 'goodies'. Remember? This is where we came in—Dunstall, the first name in special equipment.



Ray didn't win this one, but he did go on to put up the fastest lap of the day.

LIST OF SUCCESSES

World record 126.7 miles covered in one hour.

1st. Production TT New lap record. New Race Record 68.

1st. Hutchinson 100 Production 68.

1st. Evening News International 68.

1st. Mallory Park 3rd. March 68.

1st. Brands Hatch 10th March 68.

1st. Oulton Park 15th April 68.

1st. Cadwell Park Production 19th May 68.

1st. Mallory Park Production 2nd June 68.

1st. Brands Hatch 30th June 68.

1st. Thruxton Production 27th July 68.

1st. Thruxton 1000cc 27th July 68. New lap record (Unofficial).

1st. Crystal Palace Production 2nd Sept. 68. New lap record.

1st. Crystal Palace 1000 2nd Sept. 68.

1st. Brands Hatch 8th Sept. 68.

1st. Brands Hatch 2nd March 69.

1st. Snetterton 500 race 9th March 69.

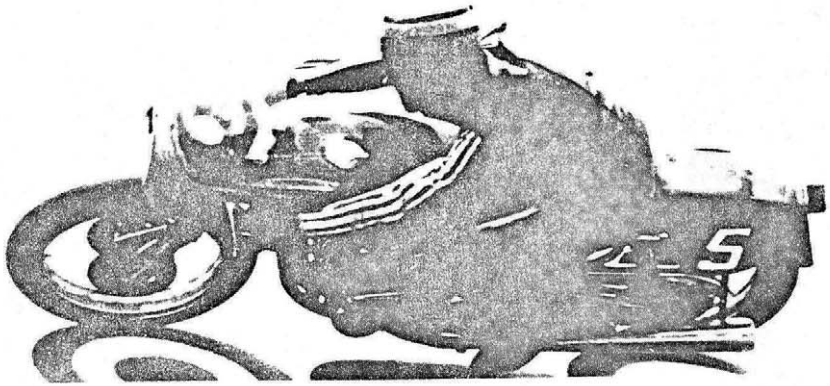
1st. Snetterton 1,000 Race 9th March 69.

1st. Brands Hatch 1,000cc race 4th April 69.

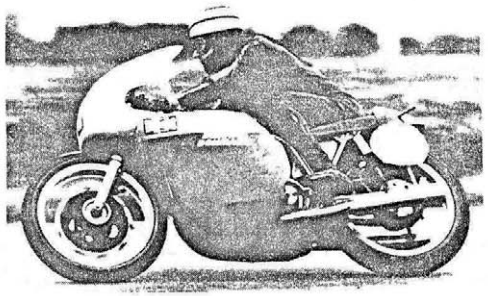
1st. Crystal Palace 1,000cc Invitation Race. New lap and race records April 7th 69.

1st. Thruxton 1,000cc race. 13th April 69.

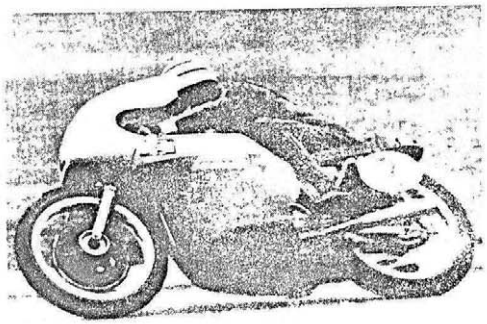
All achieved by Dunstall machines fitted with catalogued Dunstall equipment.



Ray Pickrell and Dunstall Norton, winners of the Production TT and Hutchinson 100.



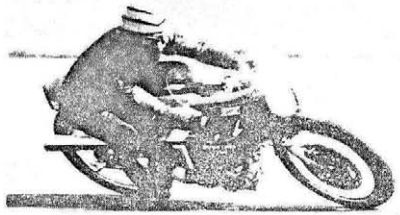
Ray Pickrell and the Dunstall Domiracer 750. The combination that scored 10 outright wins in 68.



The 500cc Dunstall Domiracer is used as a test bed for new products and ideas.

The new Dunstall 750 racer features pannier fuel tanks to lower the centre of gravity and reduce the overall height.

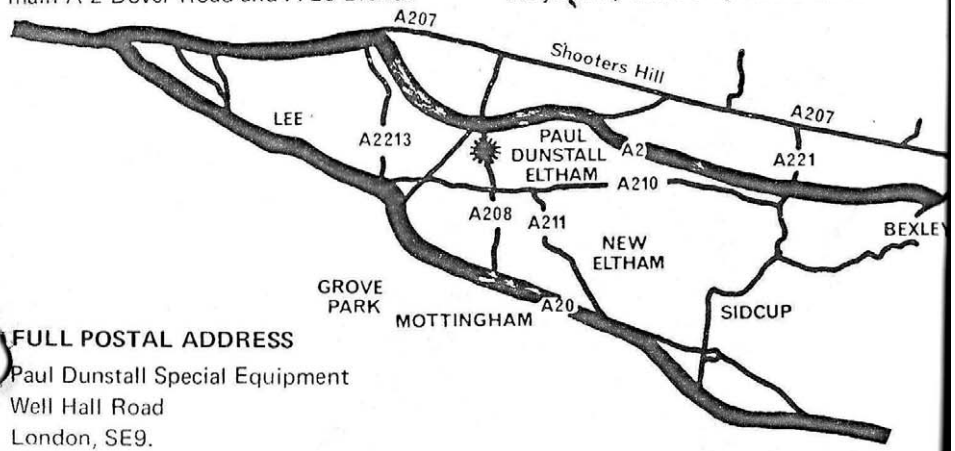
Ridden by Ray Pickrell to first place in the 1000cc race at Thruxton on April 13th 1969.



The latest 1969 Dunstall creation. Revolutionary dew design with many new features. Used in the 1000cc race at Crystal Palace on Easter Monday it set new lap and race records.

HOW TO FIND US

Our position is indicated by the star on the map (A 208 Well Hall Road) between the main A 2 Dover Road and A 20 Brands Hatch Road. By train you can travel from Charing Cross direct to Eltham, Well Hall. There is a train every twenty minutes and the journey takes only 25 minutes.



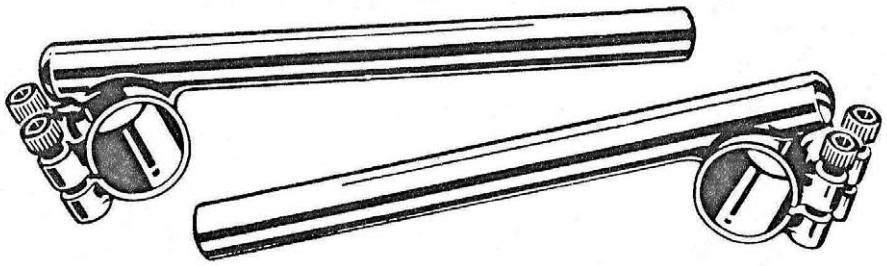
FULL POSTAL ADDRESS

Paul Dunstall Special Equipment
Well Hall Road
London, SE9.
England.

Telephone: 01 850 2020 and 9131.

Hours of Business: 9 a.m. to 6 p.m. daily except Thursday and Sunday (closed all day).

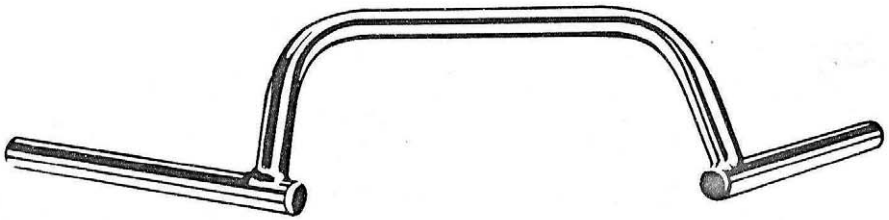
CLIP-ON HANDLEBARS



Available in 1,3/8", 1,5/16", 1¼ and 1,3/16", sizes to fit most makes and models.

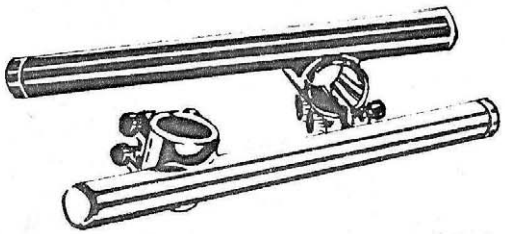
Supplied complete with allen key.

CLUBMAN TYPE HANDLEBARS



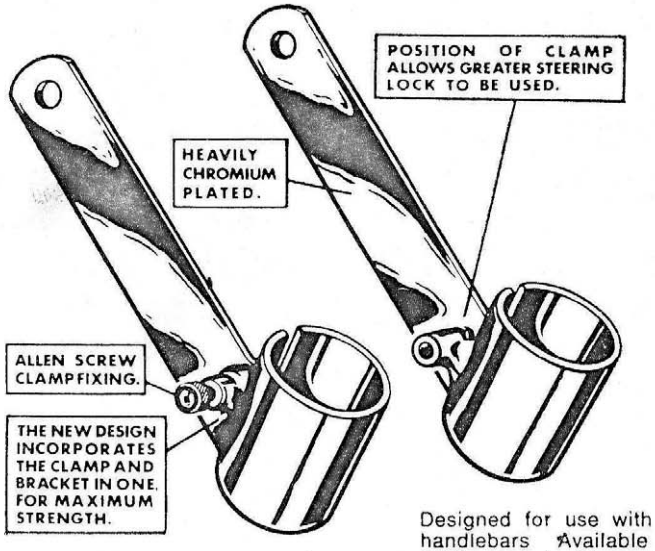
These special handlebars give a similar riding position to clip-ons, whilst still using the original fixing points.

NEW TYPE RACING CLIP-ONS



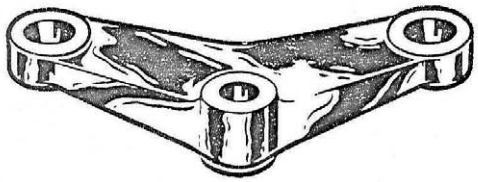
Incorporating all the features of our standard clip-ons, plus an extension on the inside of the fork tubes. The handle-bar levers can be fitted onto the extensions, giving a very narrow riding position with the minimum frontal area. Suitable for racing only. Available in 1,3/8" size to fit Norton forks only.

Supplied complete with allen key.



HEADLAMP BRACKETS

Designed for use with the new Dunstall clip-on handlebars Available in 1⅜" and 1⅝", 1½" and 1⅝" sizes to fit most machines and supplied complete with allen key.



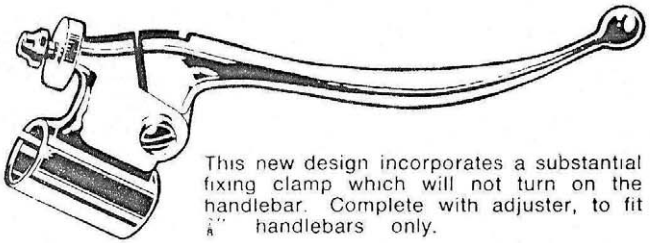
LIGHT ALLOY FORK YOKE

Polished alloy lightweight fork top yoke This is only half the weight of the original component

Available to fit all Roadholder forks.

TRIUMPH ALLOY FORK YOKE

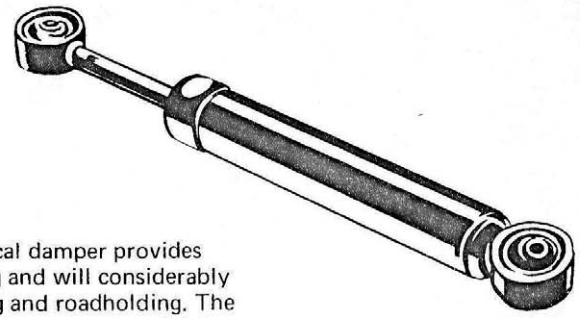
Highly polished, light alloy, fork top yoke for Triumph models from 1960 onwards – weighs only 19 ozs.



ALLOY BALL ENDED CONTROL LEVERS

This new design incorporates a substantial fixing clamp which will not turn on the handlebar. Complete with adjuster, to fit ⅞" handlebars only.

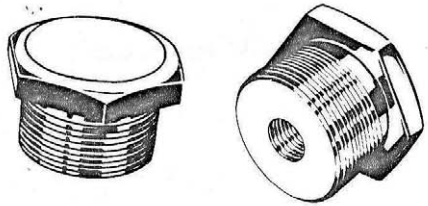
NEW HYDRAULIC STEERING DAMPER



Special cylindrical damper provides perfect damping and will considerably improve steering and roadholding. The whole assembly is very neat, weighting only one pound and can be fitted in minutes.

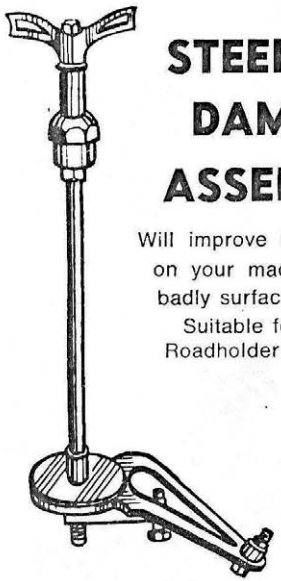
Available for Triumph, Norton and BSA

ALLOY FORK TOP NUTS



Polished alloy fork tube top nuts. 70% lighter than the standard steel components.

Available for Norton and Triumph.



STEERING DAMPER ASSEMBLY

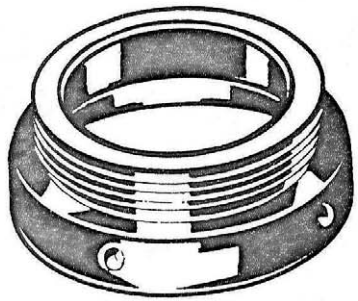
Will improve the steering on your machine on badly surfaced roads. Suitable for all Roadholder forks.

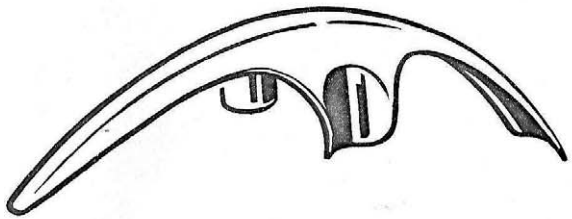
CHROMIUM EXTERNAL FORK SPRINGS

These doubel rate springs are the same as used on Manx Nortons. The double rate action absorbs bumps and shocks better than standard springs. Greatly improves high speed handling. Best results are achieved if they are used in conjunction with the paird manx rear suspensions. Suitable for Norton 'Roadholder' forks only.

ALLOY FORK RING NUTS

Light alloy fork rings for all Norton front forks.



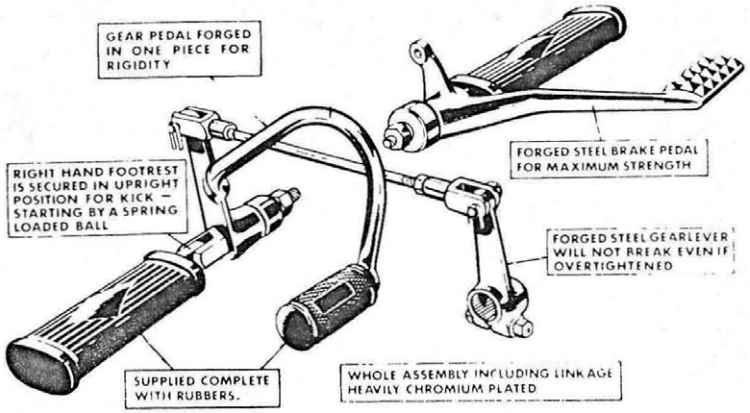


GLASSFIBRE MUDGUARD

This light racing type front mudguard will fit most machines with telescopic forks.

Available in red, yellow, blue, silver and British racing green.

NORTON REAR MOUNTED FOOTREST CONTROL KIT



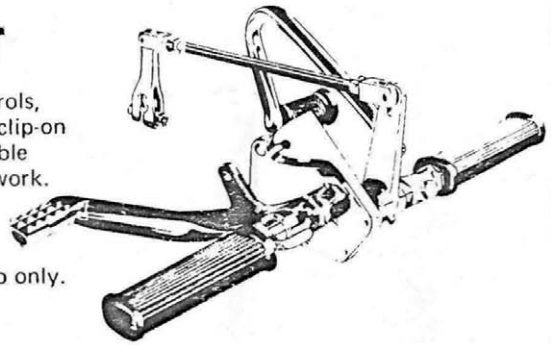
Supplied complete with rubbers, as illustrated. Available to fit all Nortson with 'Featherbed' frames and Triumph models T.120 and T.110 (except 1961).

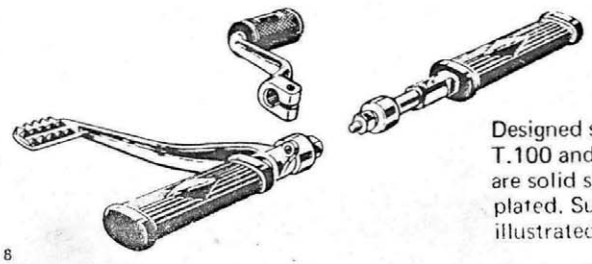
Replaces the existing footrests and controls, giving an ideal high speed riding position.

COMMANDO FOOTREST KIT

Replaces existing footrests and controls, and when used in conjunction with clip-on handlebars, gives the most comfortable riding position for high speed road work.

Supplied absolutely complete as illustrated, to fit Norton Commando only.



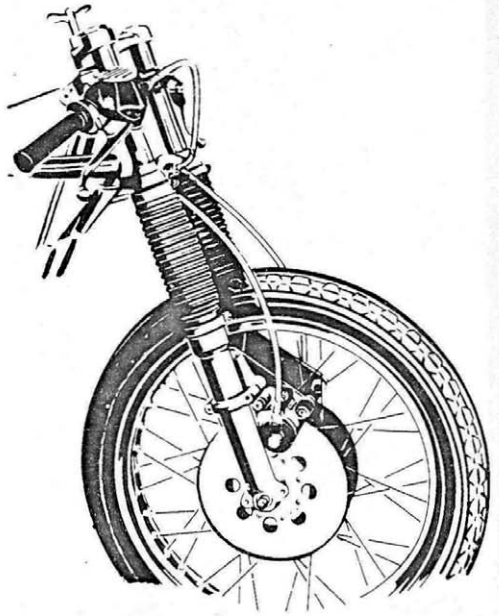


T.100 REAR FOOTREST KIT

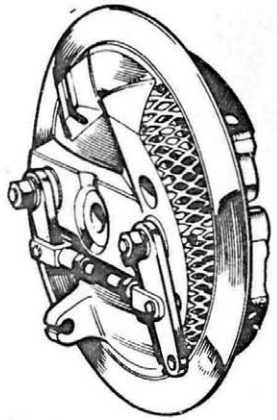
Designed specially for Triumph models T.100 and T.90 Brake pedal and gear lever are solid steel forgings, heavily chromium plated. Supplied absolutely complete as illustrated.

HYDRAULIC DISC BRAKE

The ultimate in braking. This really worthwhile buy will reduce the all important stopping distance of your machine by up to 50%.
This valuable development was previously only available on the most exotic racing machines. The assembly consists of a new front wheel complete with alloy rim and discs, twin hydraulic calipers with fixing brackets and clamps, handlebar master cylinder and hydraulic pipes. Fitted to a Norton 750 it stopped the machine from 30 m.p.h. in 19 feet and is similar to that used on the Dunstall Norton which won the Production T.T. and International 'Hutchinson 100'.
Available to order for Norton forks.
Delivery usually takes four to six weeks.



TWIN LEADING SHOE BRAKES



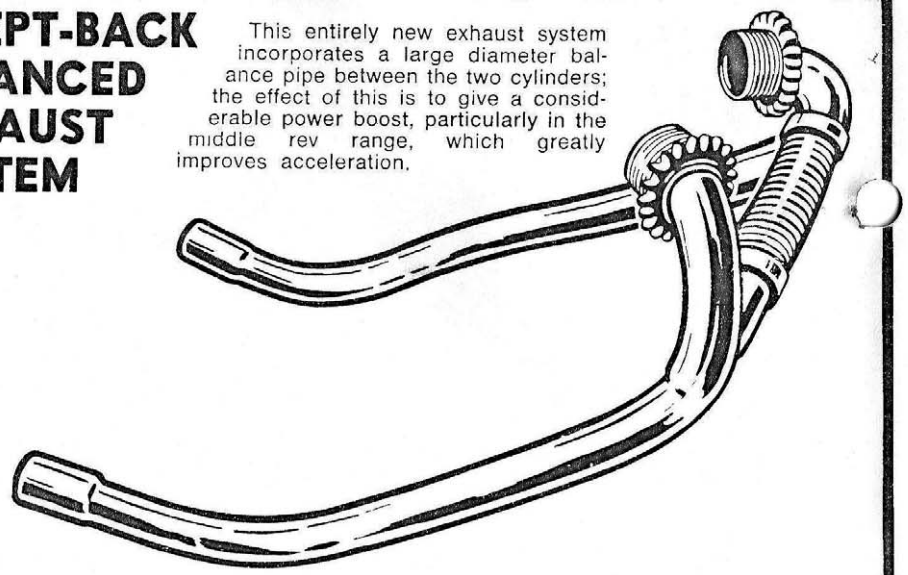
Consisting of a complete brake plate assembly with integral cast–in air scoop and racing type linings. Fitted in minutes, it completely replaces the existing brake plate, and adds all important safety to speed.
Available to fit Triumph, Norton and BSA machines.

RACING BRAKE LININGS

Manufactured from the latest racing material. Supplied in pairs complete with rivets for Triumph, B.S.A. and Norton machines.

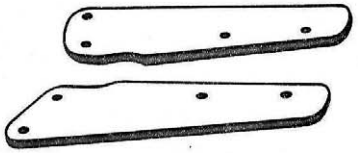
SWEPT-BACK BALANCED EXHAUST SYSTEM

This entirely new exhaust system incorporates a large diameter balance pipe between the two cylinders; the effect of this is to give a considerable power boost, particularly in the middle rev range, which greatly improves acceleration.



To achieve the maximum overall performance special diameters and lengths of pipe are used. The result is so successful that they are fitted as standard on all Dunstall machines.

The maximum benefit is obtained by using the Dunstall 'Decibel' silencers in conjunction with this exhaust system. Supplied complete with ring nuts, stainless steel balance pipe and chrome clamps. Available for Triumph, Norton and BSA.

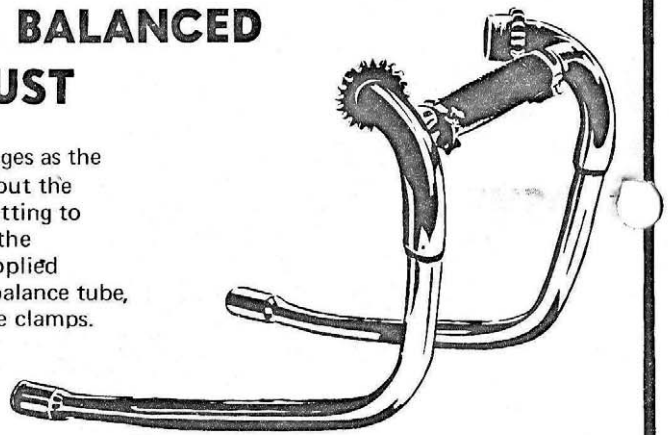


COMMANDO SILENCER PLATES

Light but strong polished dural silencer mounting plates suitable for fixing Dunstall 'Decibel' silencers to the original rubber mountings on the Norton Commando.

COMMANDO BALANCED EXHAUST

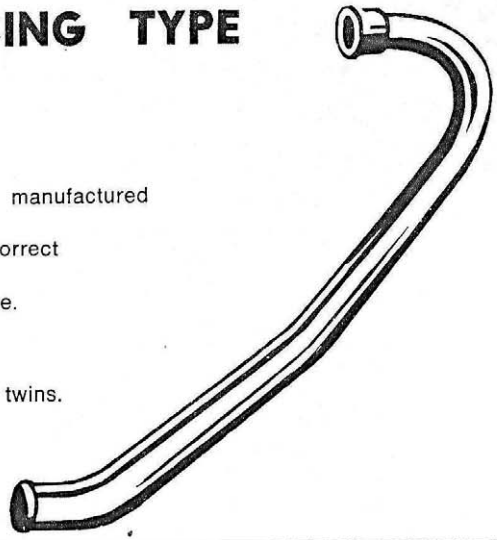
Gives the same power advantages as the swept back balanced system, but the pipe contours are very close fitting to improve ground clearance on the Commando for cornering. Supplied complete with stainless steel balance tube, chromed ring nuts and chrome clamps.

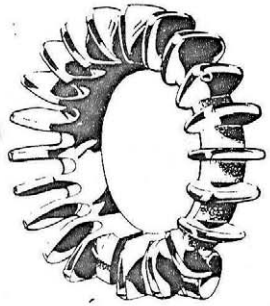


SWEPT-BACK RACING TYPE EXHAUST PIPES

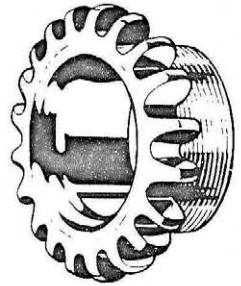
These snug fitting exhaust pipes are manufactured to special dimensions that give the correct optimum performance. for each machine.

Available for Triumph, B.S.A. and Norton twins.





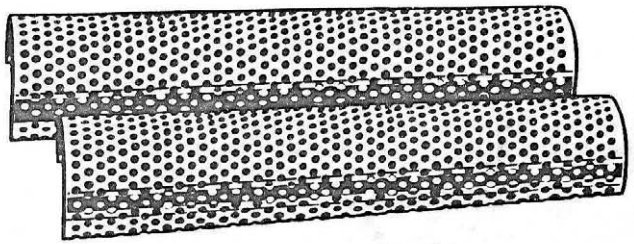
EXHAUST PIPE COOLING RINGS



Made from high grade cast aluminium, heavily finned and supplied complete with pinch bolt. For Triumph and B.S.A. twins.

Manufactured from brass castings, finned and threaded for Norton twins only.

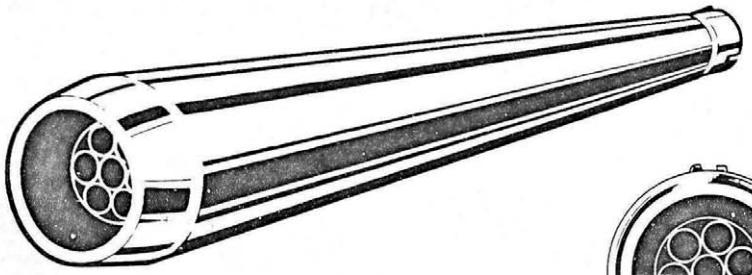
SILENCER SHIELDS

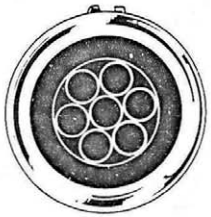


Designed specially to protect the rider when silencers are used with the upswept exhaust pipes. Chromium plates and supplied complete with clips.

Manufactured for Triumph and BSA machines only.

DUNSTALL PATENTED "DECIBEL" SILENCER





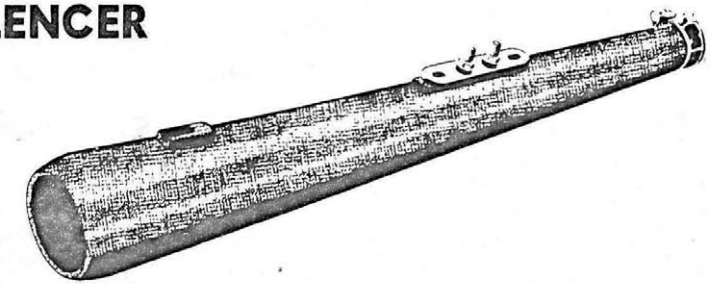
This new straight-through absorption type Dunstall silencer has an integral sound diffuser to cut down noise output without loss of performance. During tests carried out on a 750 Norton fitted with a pair of these new silencers it recorded under 90 decibels on full throttle accleration. A pair were fitted to Ray Pickrell's Dunstall Production Racer just prior to the 1968 TT and it is now a matter of history that he not only won the Production TT, but also set new race and lap records.

The same machine fitted with the same pair of Dunstall 'Decibel' silencers also won the International 'Hutchinson 100' Production race.

These silencers played a large part in enabling us to achieve the performance necessary to win races and, the patented design principles ensure that they will give the same performance boost to any four stroke engine.

Supplied chromium plated complete with front and rear stays and an exhaust pipe clamp. Available in 1,3/8", 1½", 1,5/8" and 1¾" bore sizes to fit most makes and models.

BLACK "DECIBEL" SILENCER



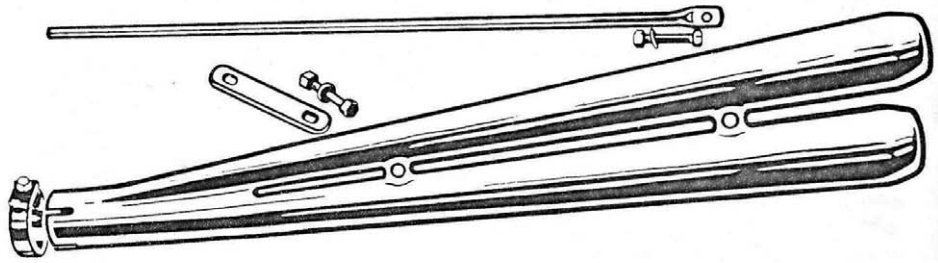
Exactly the same as the chromium plated version but finished in black wrinkle enamel. As well as being attractive the new all-black finish is very hard wearing and completely heat resistant.

To obtain the maximum performance from the 'Decibel' silencer it is necessary to increase the carburettor main jet by two sizes.

DUNSTALL PATENT DUAL SILENCER

(Patent No. 1063409)

This Dunstall Dual Silencer offers the same performance benefits and low decibel output as the 'Decibel' silencer, with the advantage of extremely compact and narrow design.

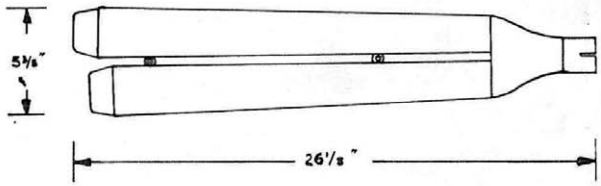


To achieve strong construction, together with a superb appearance and finish, it was necessary to design and make elaborate press tools. The cost of these tools alone equals the price of more than four Dunstall Dominator 750's! When you have seen the silencer I am sure you will appreciate that the result is well worth the expense involved.

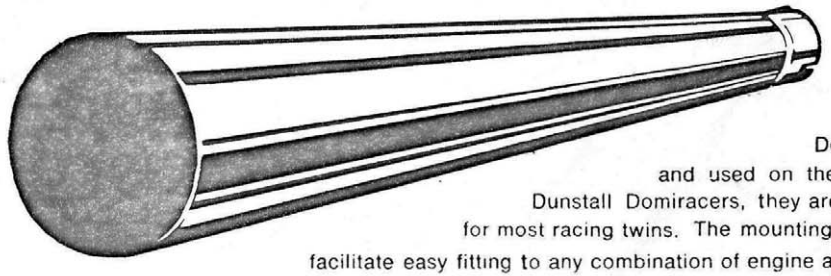
Available to fit 1½", 1⅝", and 1¾" O.D. exhaust pipes and supplied with chromed front support bracket, polished alloy rear stay, exhaust pipe clamp and all necessary nuts and bolts, absolutely complete and ready to fit.

When fitting these silencers it is essential to fit two sizes larger main jet to the carburettor.

OVERALL DIMENSIONS



DUNSTALL RACING MEGAPHONES



Developed and used on the famous Dunstall Domiracers, they are suitable for most racing twins. The mounting brackets facilitate easy fitting to any combination of engine and frame.

Available in 1½" and 1⅝" bore sizes. New black wrinkle enamel finish.

AVON GRAND PRIX TYRE

A replica of the very successful Avon racing tyre, specially developed for high speed riding and production racing.

Sizes available: 3.50 x 19 and 3.50 x 18.

ALLOY WHEEL RIMS

Only one third of the weight of standard steel rims. They drastically reduce gyroscopic reation when cornering, improving handling considerably.

Available to fit Norton and Triumph.

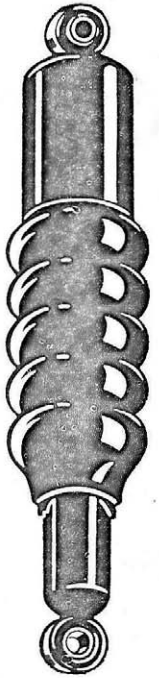
Grand Prix Inner Tubes Special inner tubes designed for use with the G.P. Tyres.

FORK GAITERS

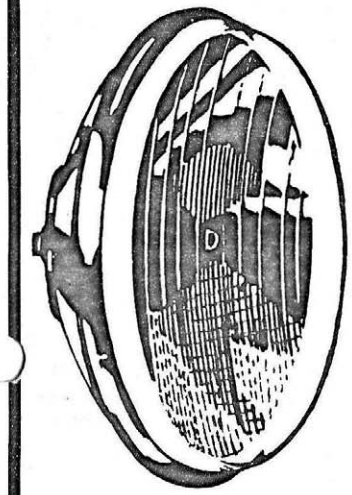
These black fork gaiters will keep the fork legs clean and free from grit. They improve the life of the fork bushes and seals considerably, and improve the appearance of the machine. Available for Triumph, B.S.A. and Norton machines.

REAR SUSPENSION GAITERS

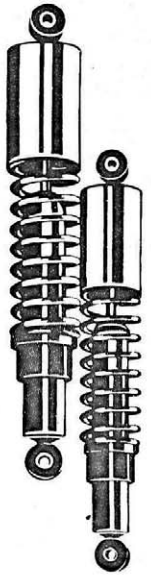
New black plastic gaiter designed to fit Girling units on Triumph, B.S.A. and Norton machines. These improve the appearance of your machine and keep the suspension units free from damaging dirt and grit.



CIBIÉ HIGH POWER LIGHT UNIT



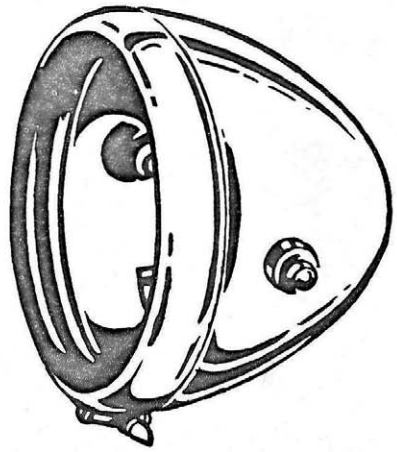
This very high powered light unit was developed specially for competition work and gives adequate illumination up to 120 mph. The new concave lens, reduces "throwback" and gives self cleaning at high speed. It is also equipped for asymmetric dipping to give good long range kerb finding. Available in 6v or 12v. Supplied complete with bulb.



MANX SUSPENSION UNITS

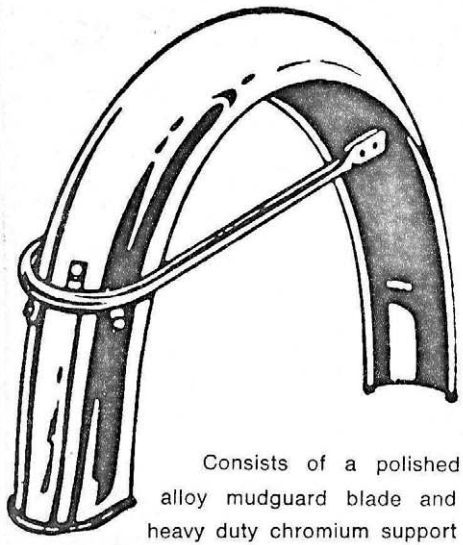
These Girling suspension units were originally designed for the Manx Norton which is renowned throughout the world for its superb handling. They are now available in specially matched pairs to fit all Norton 'Featherbed' framed machines.

CHROMIUM HEADLAMPS



Standard 7" chromium plated headlamp shells complete with rim. Available with or without ammeter hole.

GRAND PRIX REAR MUDGUARD



Consists of a polished alloy mudguard blade and heavy duty chromium support stay. Supplied complete with self locking nuts and bolts. Fits all Nortons with 'featherbed' frames and Triumph Bonnevilles.

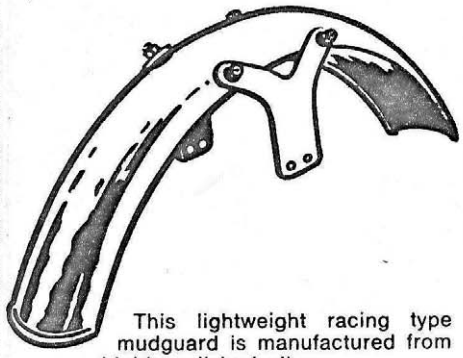
FOLDING KICKSTART LEVER

Designed for use with rear mounted footrest kits.

The lever pivots away from the riders leg once the machine has started.

Suitable for all machines with Norton/ AMC gearbox.

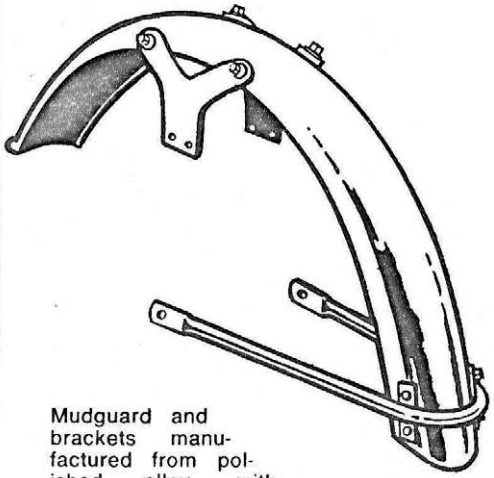
MANX FRONT MUDGUARD



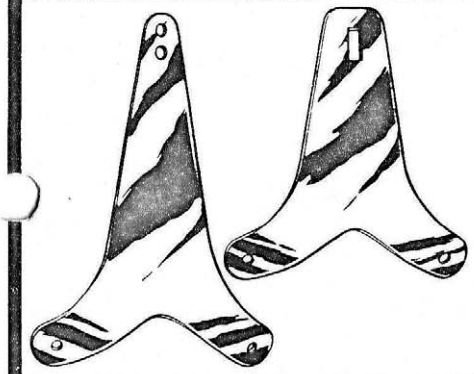
This lightweight racing type mudguard is manufactured from highly polished alloy.

Supplied complete with self locking nuts and bolts. To fit Triumph, B.S.A. and Norton machines.

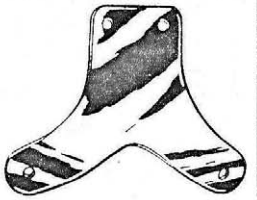
GRAND PRIX FRONT MUDGUARD



Mudguard and brackets manufactured from polished alloy, with chromium plated support stay, as illustrated. For Triumph, B.S.A. and Norton machines.

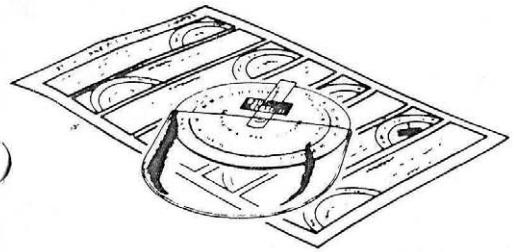


MUDGUARD BRACKETS



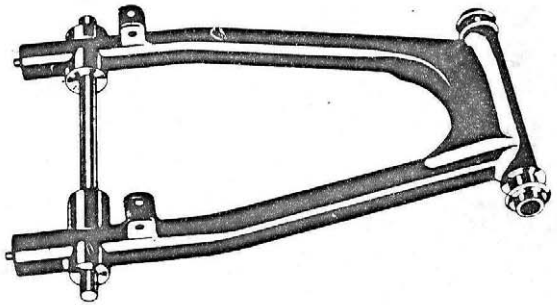
Manufactured from light, but strong, polished alloy. These brackets will enable you to fit any alloy mudguard blade to Triumph, B.S.A. or Norton

GEAR RATIO AND SPEED COMPUTER



Does away with all guesswork. How fast is your bike at 7,000 rpm? What gear ratio is necessary to do 130 mph? What difference will a larger engine sprocket make? This pocket-sized computer provides all the answers, quickly and accurately. Made from 5" diameter white PVC it comes in a transparent wallet. Full easy-to-follow instructions are supplied.

DUNSTALL SWINGING ARM

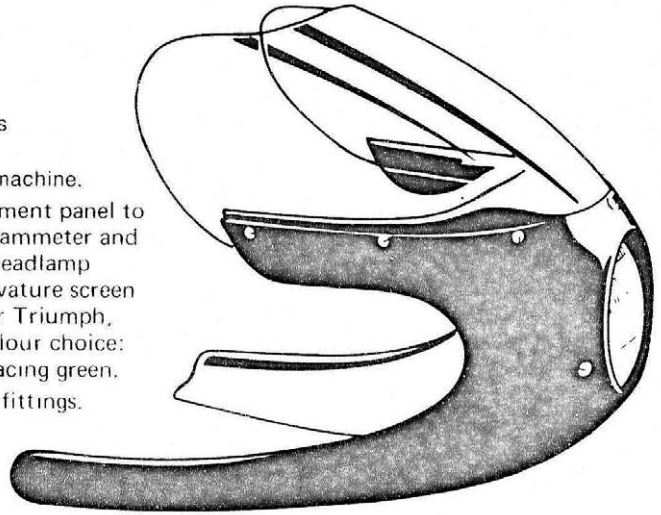


This special Dunstall swinging arm combins greater torsional rigidity with light weight. This is achieved by using large diameter tubing and extensive reinforcement around the pivot end. The special rear wheel spacers and adjustors also improve rigidity.

Designed to fit Norton 'Featherbed' frames only it should be used with the standard Dominator rear wheel. The advantages it offers are improved handling enabling more power to be used whilst cornering.

Supplied as a complete assembly consisting of swinging arm fitted with bronze bushes, brake plate stop and chainguard mounts, specially hardened steel pivot sleeves, rear wheel adjusters, spacers and spindle.

DUNSTALL GT FAIRING

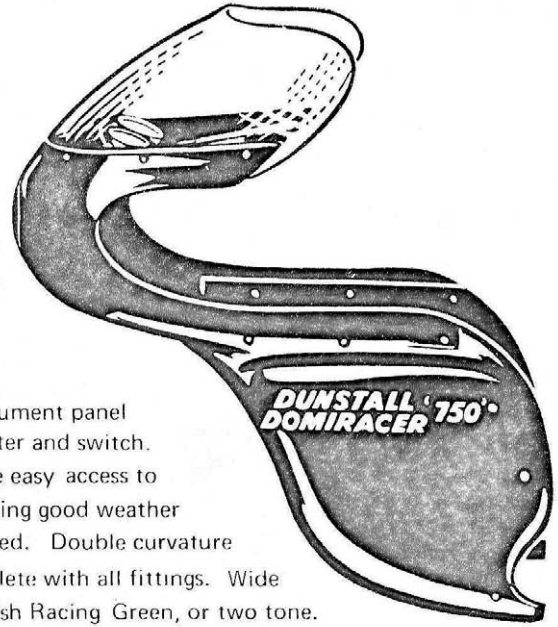


This new GT fairing offers protection for the riders body without covering the machine.

It incorporates a full instrument panel to accept speedo, revcounter, ammeter and switch. A fully adjustable headlamp mounting and a double curvature screen are also fitted. Available for Triumph, Norton and B.S.A. Wide colour choice: red, blue, silver or British racing green.

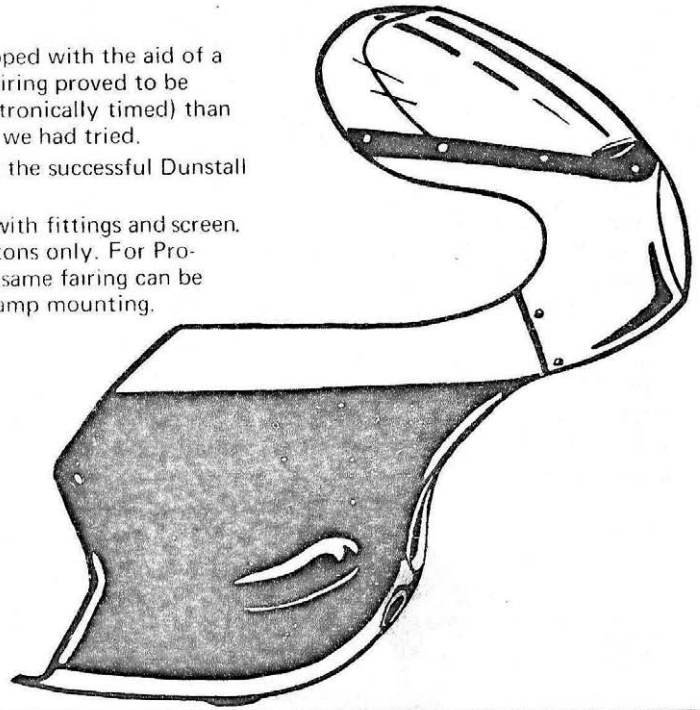
Supplied complete with all fittings.

DUNSTALL DE-LUXE FAIRING



Fully adjustable headlamp mounting incorporated in fairing. Built in instrument panel to accept speedo, revcounter, ampmeter and switch. Quickly detachable side panels to give easy access to engine. Aerodynamic design combining good weather protection with higher maximum speed. Double curvature screen. Easily fitted. Supplied complete with all fittings. Wide colour choice. Red, Blue, Silver, British Racing Green, or two tone. Available to fit all Triumph and Norton large capacity twins.

DUNSTALL RACING FAIRING

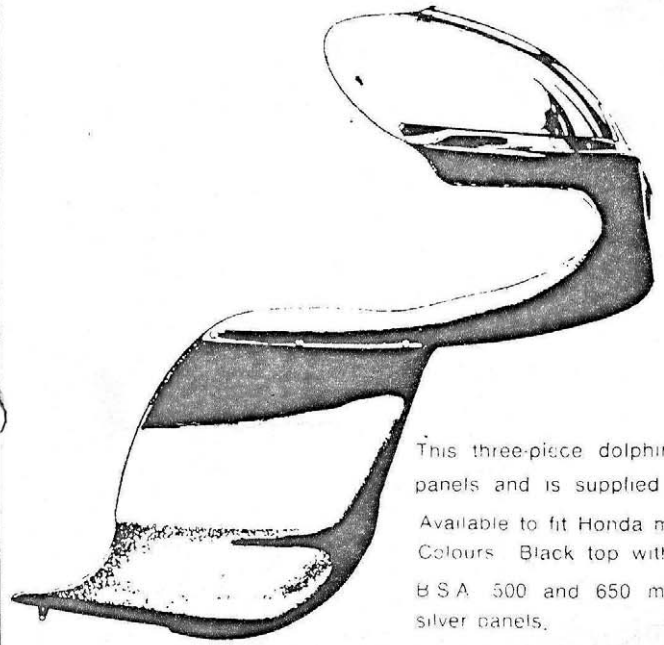


Designed and developed with the aid of a wind tunnel. This fairing proved to be 6 m.p.h. faster (electronically timed) than any previous fairing we had tried.

Used continually on the successful Dunstall Domiracers.

Supplied complete with fittings and screen. Available to fit Nortons only. For Production Racing this same fairing can be supplied with headlamp mounting.

DUNSTALL DOLPHIN FAIRING

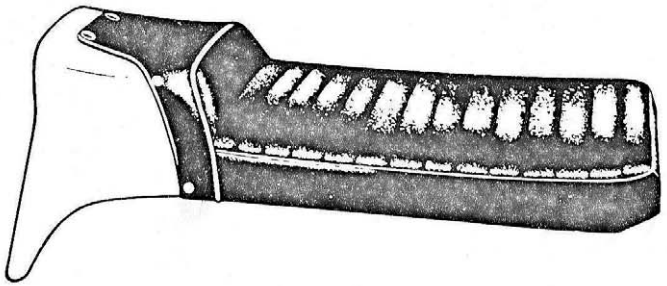


This three-piece dolphin fairing has detachable side panels and is supplied complete with all fittings.

Available to fit Honda models: CB72, CB77, CB450 Colours Black top with silver panels

B S A 500 and 650 models. Colours Red top with silver panels.

DUNSTALL GT DUAL SEAT



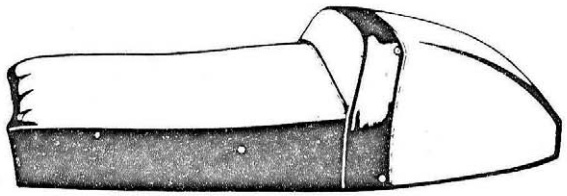
This very popular seat has now been further improved by incorporating a lock in the toolbox lid so that all items in the toolbox can be safely secured. Seating area is 18" x 10"

It completely replaces the standard seat and rear mudguard assembly.

Colours available: blue, red, silver, yellow and British racing green.

Available to fit Norton, Triumph and BSA

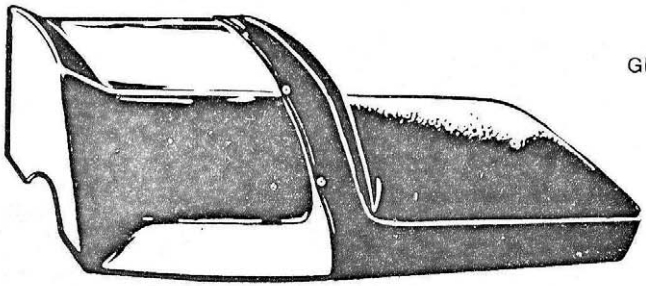
DUAL RACING SEATS



These dual racing seats are designed for use with our glassfibre fuel tanks.

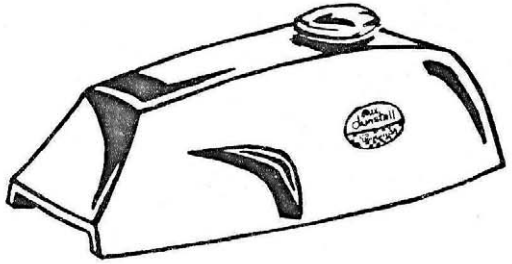
They are available in Blue, Red or Silver

SINGLE RACING SEAT



Glassfibre single racing seat available to fit Norton Featherbed frames.

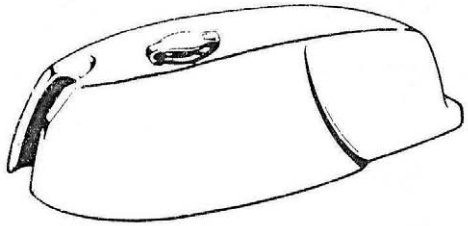
4½ GALLON TRIUMPH TANK



New style glass fibre fuel tank specially designed for Triumph T.120 machines. Incorporates a chromium quick action filler cap. Should be used in conjunction with GT or dual racing seat.

Available in blue, red, yellow or silver.

4 GALLON NORTON TANK



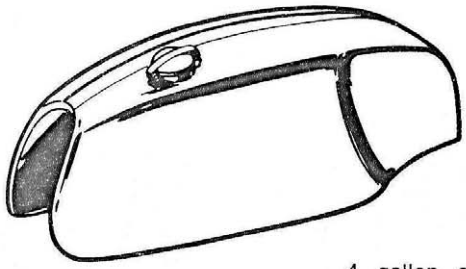
This new style 4 gallon capacity petrol tank is designed specially to fit Norton Slimline frames

Used on our production T.T. winning machine.

Fits with any of our fibre glass seats.

Colours: red, silver, yellow and British racing green.

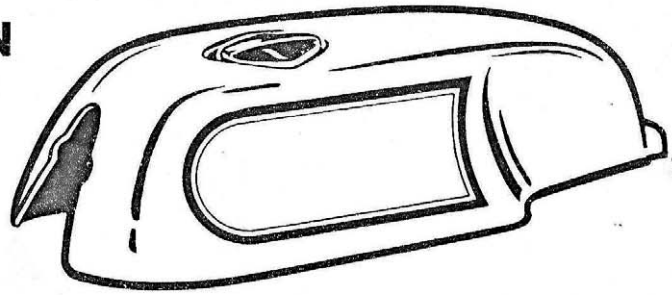
POLISHED ALLOY TANK



4 gallon capacity highly polished alloy petrol tank. Individually hand formed from aluminium sheet, welded, tested and finally polished. Supplied complete with alloy racing filler cap.

For Norton Triumph, and B.S.A. twins.

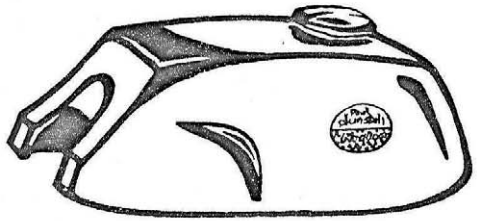
3½ GALLON LOWLINE TANK



This 3½ gallon fuel tank is available in the following colours :—

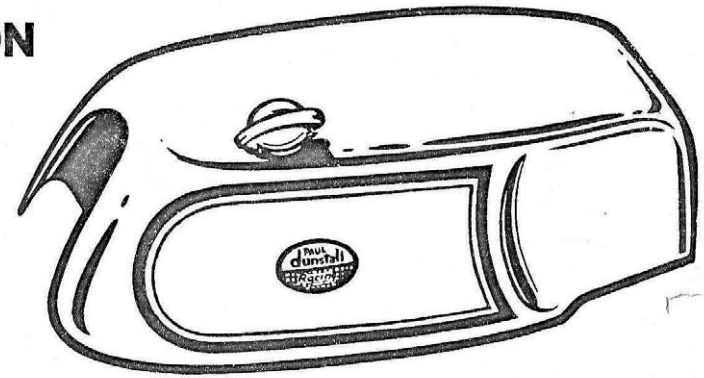
TRIUMPH : Blue with silver lining.
NORTON : Red with silver lining. Silver with black/red lining.
B.S.A.: Red with silver lining.
HONDA : Silver with black/red lining.

4½ GALLON COMMANDO TANK



This new design of glass fibre fuel tank is made specially for the Norton Commando and should be used in conjunction with the GT dual seat. Available in red, yellow and silver.

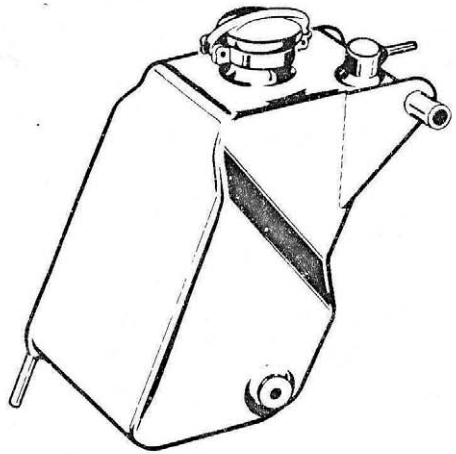
5 GALLON FUEL TANK



This 5 gallon capacity fuel tank is available in the following colours:—

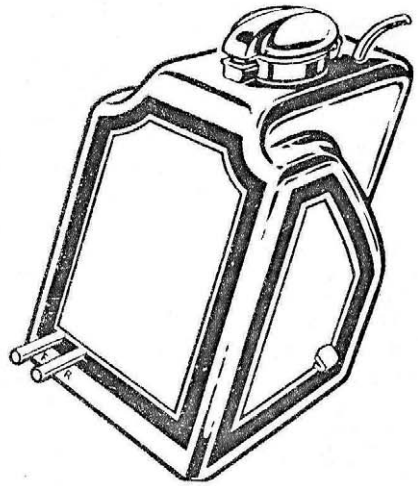
TRIUMPH : Blue with silver lining.
NORTON : Red with silver lining. Silver with black/red lining.
B.S.A.: Red with silver lining.

ALLOY CENTRAL OIL TANK



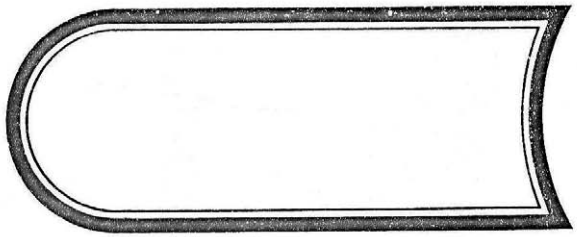
Polished alloy central oil tank with a working capacity of 5 pints. Fitted with a quick action Monza filler cap and threaded to accept the standard Norton oil union and filter.
Available to fit Norton 'Featherbed' frames.

GLASS FIBRE OIL TANK



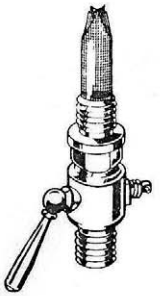
4½ pint working capacity for Norton 'Slimline' models.
5½ pint working capacity for Norton 'Featherbed'.
Finished in silver with black lining as illustrated.

DUNSTALL TANK TRANSFERS



These double line, ready varnished, water-slide transfers are available with one thin red line and one thick black line, or with two silver lines.
Lowline (measures 13" long x 5¼" high overall).
5 gallon (measures 14" long x 7" high overall).

RACING TYPE FUEL TAPS



These lever type petrol taps will fit standard or glass fibre petrol tanks and allow a larger fuel flow than other types of taps.

TUNING A 750 NORTON FOR THE STREET

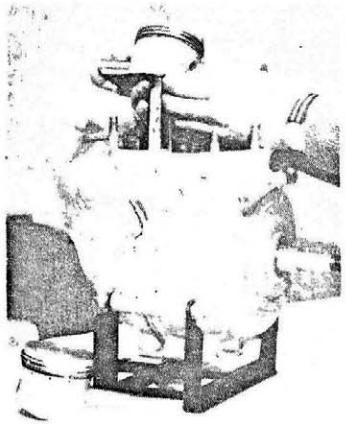
INTRODUCTION

The 750 cc Norton Atlas or Commando engine has in its design a tremendous potential for performance improvement. Stepping up the power output need not reduce Flexibility or reliability. In fact the modifications I have suggested will improve the overall efficiency, which means better fuel consumption as well as more B.H.P.

It is up to you to decide on the stage of performance you require and then this article will enable you to obtain it. Assuming that the engine is completely standard I have suggested the modifications which give the biggest improvement for the minimum cost, without loss of reliability.

The most obvious place for improvement is in the compression ratio (Atlas 7.4 to 1. Commando 8.75 to 1.) Fitting higher compression 10 to 1 pistons will add a lot more punch throughout the rev range. To gain the maximum benefit from the higher compression ratio it is essential to reset the ignition timing at 28 degrees B.T.D.C. fully advanced. This is because the higher compression promotes faster and more efficient flame spread. It will also be necessary to increase the carburettor main jets by two sizes. With this done and the ignition timing accurately reset you will not find any noticeable loss of flexibility.

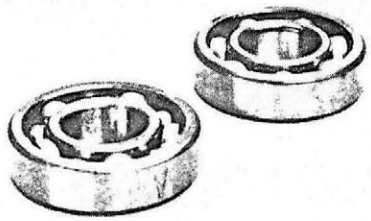
There is considerable room for improvement in the porting of the cylinder head. The performance gained from this work is a direct example of the effect of improving efficiency and is really worth while because, simply by reshaping and enlarging the ports to the shape



Apply heat to the piston crown until the gudgeon pin can be pushed in with hand pressure.

outlined in the diagram; you will achieve a marked improvement in performance.

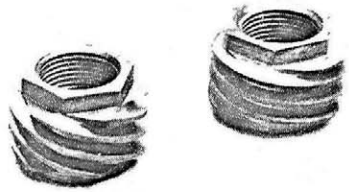
To carry out this work you will need rotary files and mops and the use of a power drill. The exhaust ports are not so important, but they will benefit from being enlarged. Care should be taken to ensure that you do take plenty of time over porting,



The special high capacity timing side main bearing can be readily distinguished by the special cage and the two extra balls.

so don't try to rush it.

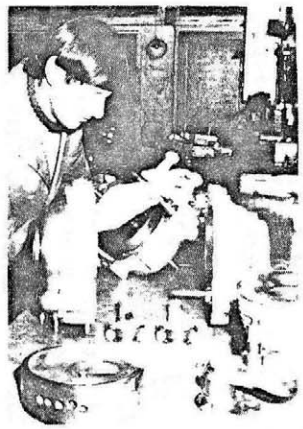
The higher compression ratio and better cylinder filling achieved through the reshaped ports will mean an increase in combustion temperature and intensity. If this performance gain is to be used to the full it is advisable to replace the standard valves. For this purpose I have produced special valves manufactured from H. 18. S material to withstand the increased temperatures. Special bronze Hi-Dural Five guides will allow the heat from the valves to dissipate more rapidly away to the head. The valves must be carefully ground into their seats using fine grinding paste only, until a symmetrical and unpitted seat is achieved.



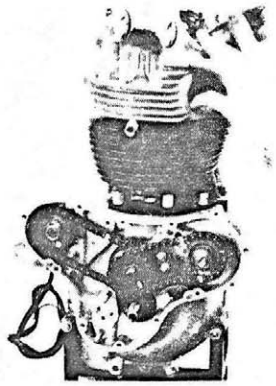
The latest double speed oil pump drive can be easily identified by counting the number of worm starts; 6 on the double speed and 3 on the old, obsolete type.

Before seeking any further improvement it is advisable to ensure that the oil pump is working perfectly. A good guide to the condition of the pump is to check the oil tank level after a short run and then compare it after the machine has stood for 24 hours.

If the level has dropped appreciably it means that oil is seeping past the pump into the crankcase. In this case a reconditioned or new pump is required. All of the latest 750s are fitted with double speed oil pump gears as standard, to check on yours,



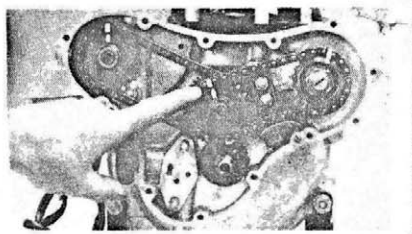
Care must be taken to ensure that the breather rotary plate and spring are located properly when fitting a new camshaft.



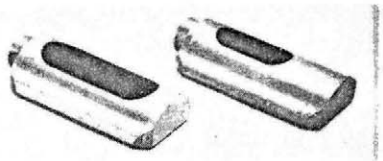
Use a small spacer between the head and barrel to make the location of the pushrods a much easier job. Once all four pushrods have been located, the spacer can be removed.

count the number of thread starts on the large oil pump drive worm. Double speed has six, the old obsolete type has only three.
The new Street Camshaft is the next step. The latest type PD/03 version fits easily without any modifications to the crankcase or camshaft bushes.
A point that should be mentioned here is that, if full use is to be made of the camshaft, it is necessary to fit alternative valve springs to handle the extra valve lift. American S & W type or our dual rate springs are suitable, the main advantage of the S & Ws being their low seat pressure when fitted and their exceptional reliability and long life. A tip that will save a lot of time when fitting the camshaft is to mark the timing chains, sprockets and gears with paint before removal so that they can be refitted exactly as they came off. This means that retiming the camshaft will not be necessary because, providing the original timing was correct, the new camshaft cannot fail to be correctly timed providing you line up the paint marks when reassembling.
Whilst the crankcases are apart it is advisable to inspect the main bearings carefully for signs of wear and if in doubt replace them. Drive side main bearings with a tighter tolerance are being fitted as standard for 1969, because they give a considerable improvement in bearing life.
Being no more expensive than a standard bearing, it would be a false economy not to fit one. (Part No. MRJA 30 ODC.) A special timing side main bearing with a 20% higher load capacity is available and although it is more expensive than standard, it does give extra re-assurance if the machine is to be ridden really hard.
Before refitting the barrell, remove the camfollowers and inspect for signs of wear on the Stellite Pads.

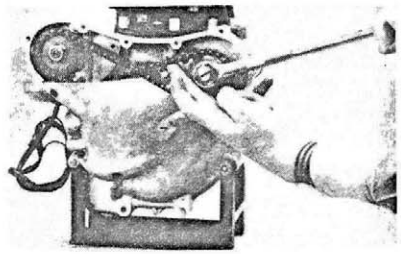
If wear is only slight it will be possible to carefully stone them until the Stellite surface is perfectly flat. If the wear is severe they will have to be reground on a surface grinder.



Marking the timing chains, sprockets and gears with painted lines saves time and trouble on re-assembly.



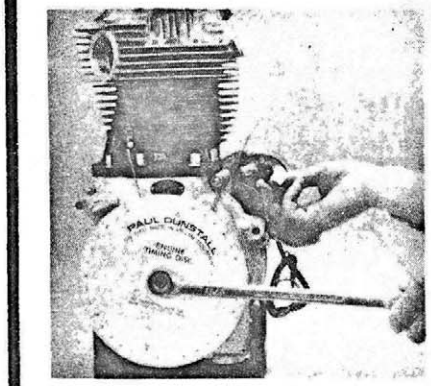
Camfollowers can be lightened by lengthening the slot with rotary cutters and files.



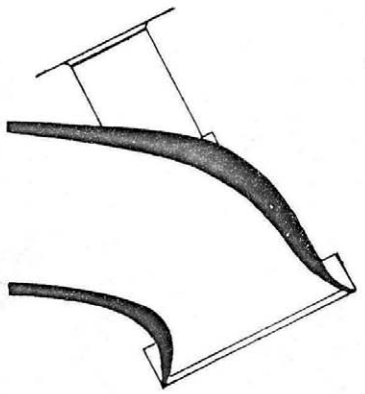
Use a cutaway timing cover to accurately locate the intermediate gear spindle before adjusting the timing chains.

Lightening the camfollowers is advantageous because it lessens the inertia load on the valve train. A worthwhile saving in weight can be achieved by lengthening the centre slots, as illustrated in the photograph. Easiest method of doing this is with a rotary file and power drill.

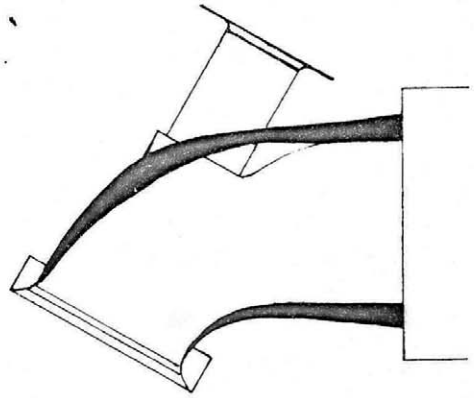
Avoid rushing the final assembly of the motor because time and care spent at this stage can pay real dividends in reliability.
At this stage you have a very efficient high performance engine and it is now important to avoid any un-necessary power losses through inefficient or unsuitable induction and exhause systems.
If the standard carburettors are being used it will be necessary to increase the main jets by four sizes. New type Amal 932/01 paired concentric carburettors are now available and they will improve flexibility as well as maximum speed. To achieve the full advantage from these larger bore 932 carburettors it is necessary to increase the induction length slightly. Experiments have shown that a 1½" spacer between the carburettor and cylinder head gives the best results.
The last and most significant item now remaining is the exhaust system. Dynomometer tests have shown that the balanced exhaust system with patented decibel silencers gives the best performance possible, short of using racing megaphones. This is because the unique principal of the balanced exhaust system gives a considerable power boost in the middle rev range, whilst the patented decibel silencers improve the top end power. The net result of the two gives the best of both worlds, with improved acceleration and high top speeds.



Care and time spent in achieving really accurate ignition timing will pay dividends in performance and flexibility.

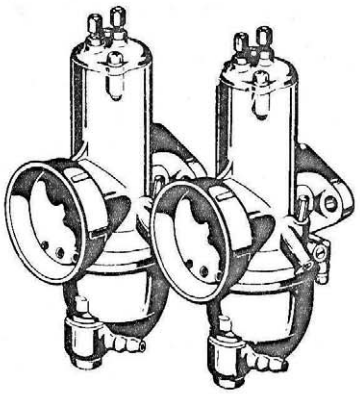


Enlarge the inlet port diameter to suit the carburettor size, and over emphasise the curve to promote gas flow downwards.

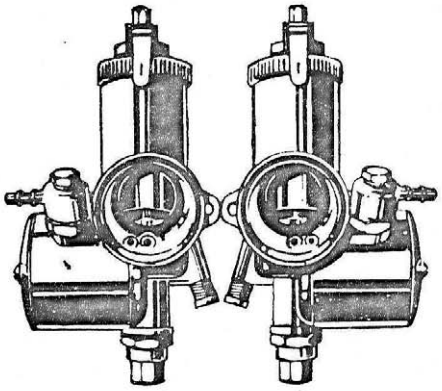


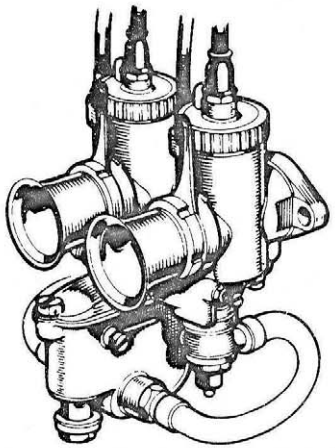
The exhaust port can be generally enlarged, but care must be taken not to break through into the stud hole.

PAIRED CARBURETTORS



The latest type Amal carburettors supplied in matched pairs (L/H and R/H).
Concentric available in series 900 (1 3/16") and series 932 (1¼").
Monobloc carburettors series 389/689 available in 1⅛" or 1 3/16" sizes.





PAIRED GRAND PRIX CARBURETTORS

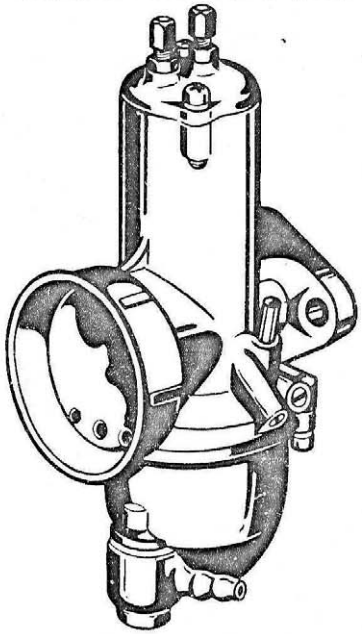
Paired Amal racing carburettors complete with remote float chamber and dual throttle and air cables, 1 5/16" bore size only.

SETTING TWIN CARBURETTORS

The two throttle slides must open equally. The best way to do this is to use two short lengths of ¼"diameter steel rod (or two pencils of the same size would do), insert through both carburettors so that the throttle slides can rest on them. With the slides resting on the rods, run down the cable adjusters to give slack or the wires. Carefully unscrew the cable adjuster to take up the slack (on one carburettor), verify the slide is still sitting on the rod until the slack in the cable is absorbed. Do the same with the second carburettor, so that when the twist grip is manipulated both slides sit on the rod simultaneously. Take out the rods.

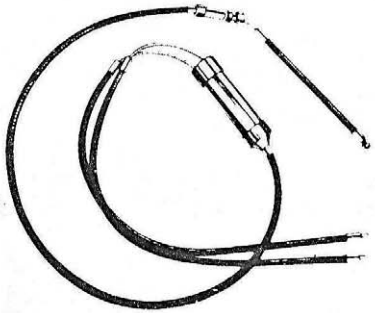
Start the motor and let it run for a short while, with **fast** idling, with the motor running take off one plug lead. Then adjust the idling for the cylinder running by manipulating the pilot air screw, in conjunction with the throttle stop screw, until an even slow idling is obtained. Repeat on the other cylinder and then with both cylinders running the idling will be too fast. Unscrew by an equal amount both throttle stop screws until you get the desired idling speed.

'SERIES 600' CARBURETTOR



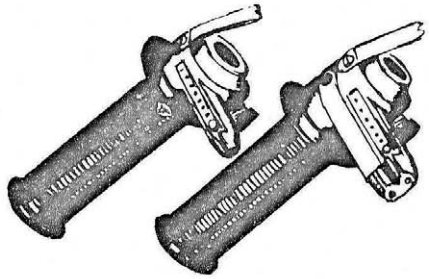
The very latest design in carburettors from Amal. Available for fitting to twin carb manifold.

TWIN CARBURETTOR CABLE



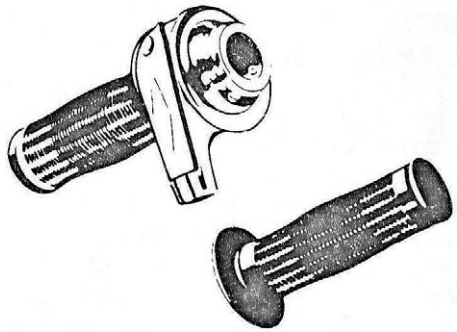
Special two into one cable complete with junction box as illustrated
Enables two carburettors to be operated with a normal single twist-grip.

CHAIN PULL TWISTGRIPS



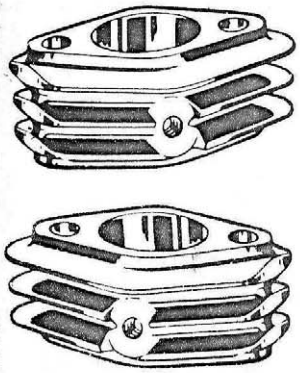
Unique design of twist grip gives a straight pull on the cable eliminating friction and giving a light smooth action. Available for single of dual cables.

QUICK ACTION TWISTGRIPS



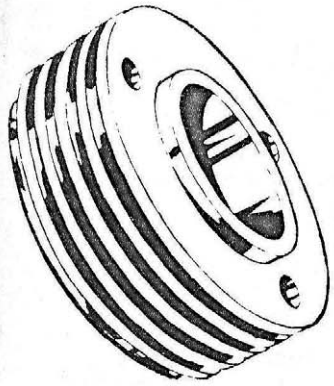
Special quick action twistgrip. Incorporates all the advantages of the standard chainpull twistgrip plus a very quick action, needing only two thirds of the normal rotation. Available for twin cables only.

FINNED INDUCTION SPACERS



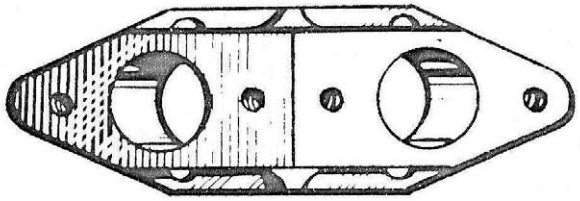
Special light allow castings, extensively finned. Supplied complete with studs. Available in 1,3/16" and 1¼" Bore

FLOAT BOWL EXTENSION



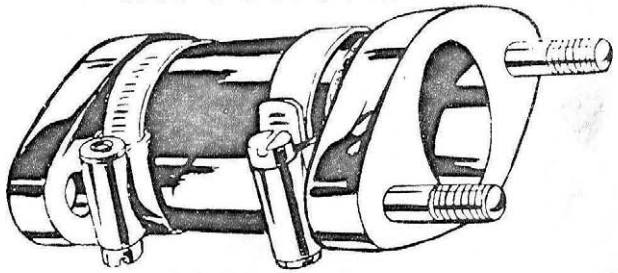
Polished alloy with fins, to fit all Amal Monobloc carburettors. Greatly increases float chamber capacity.

TWIN CARBURETTOR MANIFOLD



This special alloy manifold fits on to the pre-down draught Norton cylinder heads and enables you to fit twin carburettors which will give an all round increase in performance Supplied complete with studs

DOMIRACER FLEXIBLE INDUCTIONS

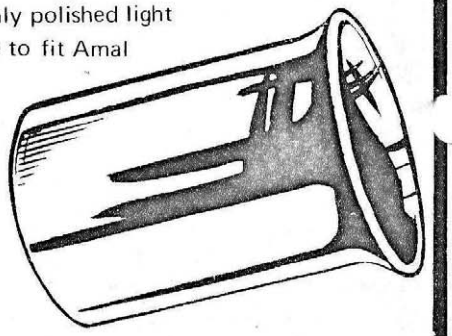


Designed specially for racing they fit onto the down-draught cylinder head and can be used with Monobloc, Concentric or G.P. carburettors.

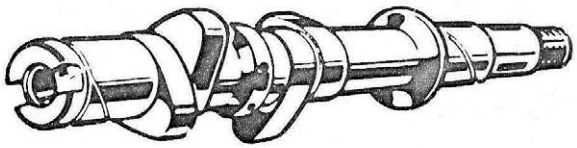
Available in 1, 3/16" Bore Size

BELLMOUTH VELOCITY TUBE

Made from highly polished light alloy. Available to fit Amal carburettors. Monobloc and Concentric



DUNSTALL MK 3 STREET CAMSHAFT



This new Dunstall Street Camshaft is designed to give a greatly improved performance without loss of flexibility.

Used in our production and racing machines throughout 1968 this new camshaft has provided the largest single contribution to our impressive list of successes.

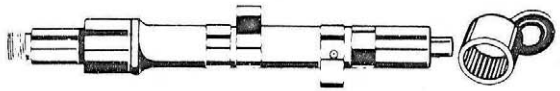
Dynamometer tests have proved the MK 3 to be even better than we had expected, giving 1½ brake horse power more than our previous type.

Precision manufactured from EN 33 billets, case hardened to a depth of .050" and a hardness of 800 V.P.N.

Fits straight into existing Norton Crankcases without alteration to bushes or camfollowers.

Undoubtly the fastest Norton Camshaft ever.

DUNSTALL RACING CAMSHAFT



This is a new addition to the Dunstall range of tuning equipment. Drawing upon our unequalled experience with Norton Dominators, together with the aid of our electronic equipment and a computer, the camshaft was designed, developed and extensively tested during the winter of 68/69.

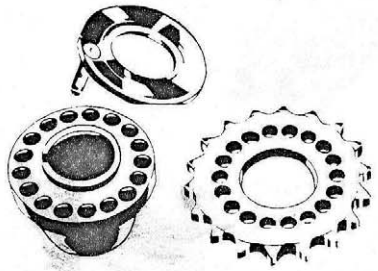
Already in use in our Dunstall Domiracers it has improved the speed and performance considerably.

Limited supplies are now available for genuine racing use only.

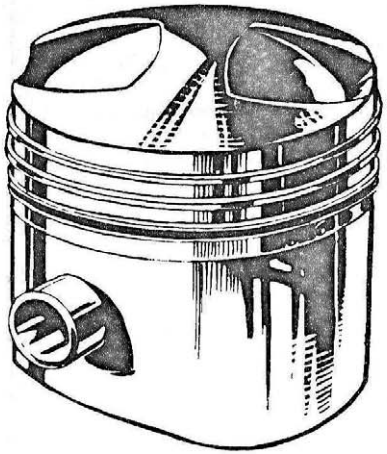
Two versions are available, a standard bush fit type and a special needle roller version with pressure oil feed to each cam. No machining is necessary to fit the needle roller type, the special bearings fit straight into the existing housings.

VERNIER SPROCKET CAMSHAFT

This specially designed sprocket assembly incorporates an accurate vernier adjustment, making accurate valve timing simple and quick.



HIGH COMPRESSION PISTONS



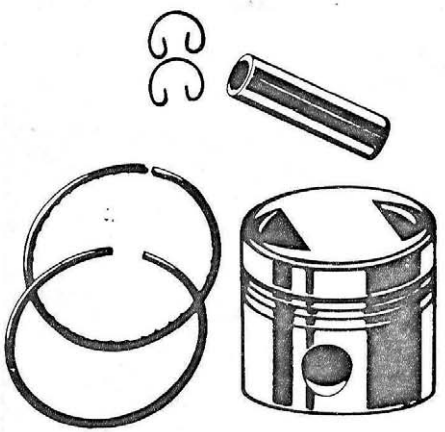
The spun cast construction gives ideal grain flow and density to the high silicon content material. This minimises distrotion, allowing closer tolerances to be used, improving both performance and reliability of your engine.

Available in the following sizes.
Standard, plus .020", plus .030", plus .040",
to fit the following models.

NORTON 88	compression ratio	9.75 to 1.
NORTON 88 S/S	.. ..	10.25 to 1.
NORTON 99	.. ..	9.25 to 1.
NORTON 99 S/S	.. ..	9.75 to 1.
NORTON 650 S/S	.. ..	10.5 to 1.
NORTON 750 Atlas	.. ..	10 to 1.

Supplied in pairs complete with piston rings, gudgeon pins and circlips.

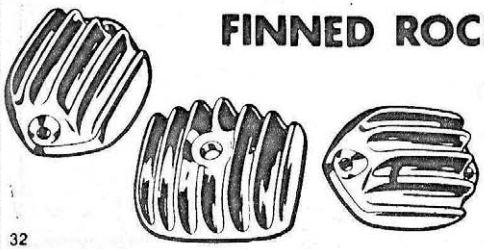
750 RACING PISTONS



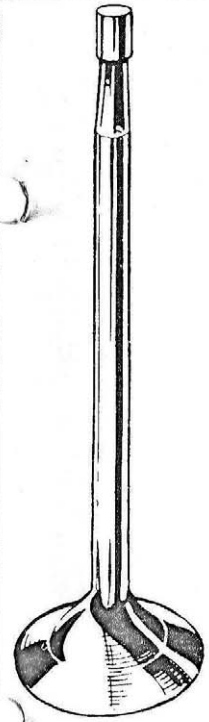
Special 10.5 to 1 compression ratio, spun cast, high silicon content pistons for Norton 750's. The design features a single Dykes compression ring, a normal oil control ring and a heavy duty gudgeon pin.

Available in standard bore size only for all Norton 750 engines.

FINNED ROCKER COVERS



Light alloy Castings, Heavily finned and polished. Available to fit all Norton Dominator Engines.

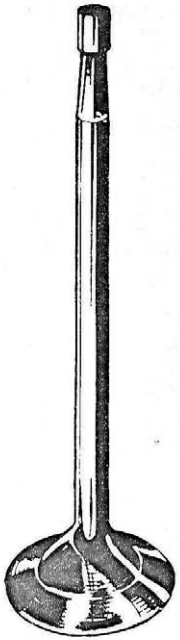


LARGE INLET VALVES

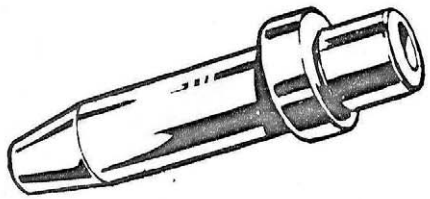
Special inlet valves for Norton 750. Manufactured from H 185 material with induction hardened tip. Valve head contoured to improve gas flow and radiused to improve overlap clearance when using high performance camshaft. Collet groove repositioned to achieve correct valve spring tension.

EXHAUST VALVES

For Norton 750. Manufactured from H 185 material with induction hardened tip to withstand the higher temperature.

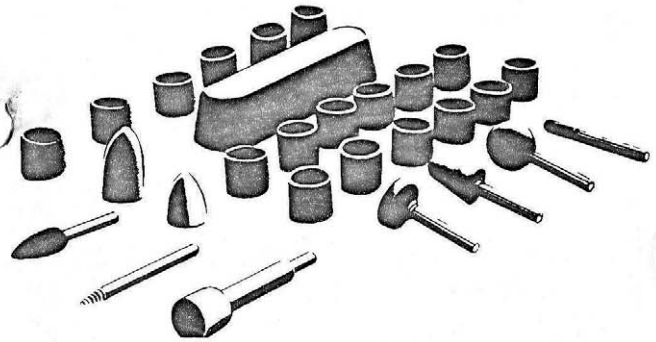


BRONZE VALVE GUIDES



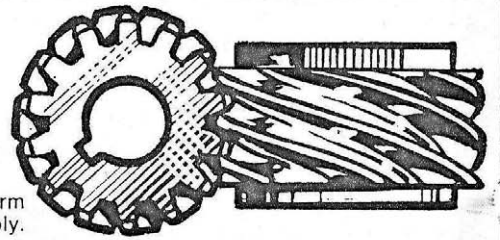
Manufactured from bronze "Hi-Dural Five (Regd)" material. They improve heat dissipation from the valve and lessen wear. Available for all Norton Dominator engines.

GRINDING AND POLISHING KIT



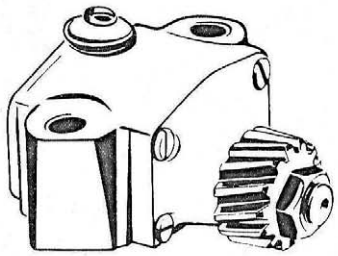
Kit includes rotary files, rotary grinder, rotary polishers, sanding sleeves, sleeve holder and special polishing compound. Enables you to make a profesional job of port shaping and polishing.

DOUBLE SPEED OIL PUMP



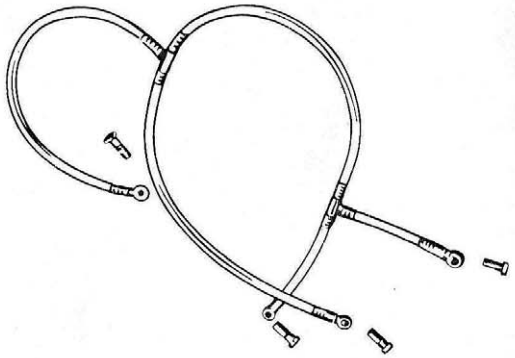
Consists of a special oil pump gear and worm drive. Greatly increases oil pressure and supply. Fits Norton models 88, 99, 650 and 750.

SERVICE EXCHANGE OIL PUMP



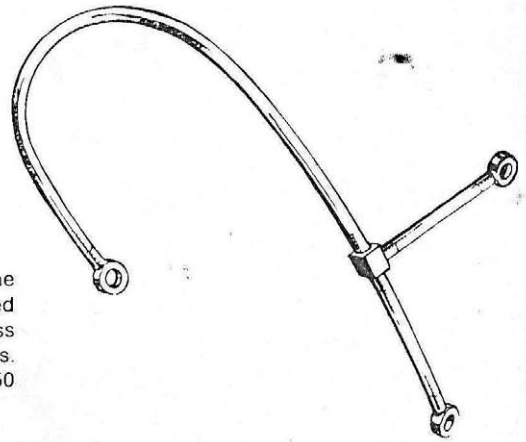
Factory overhauled and tested oil pumps supplied on an exchange basis only.

CAMSHAFT AND ROCKER FEED KIT

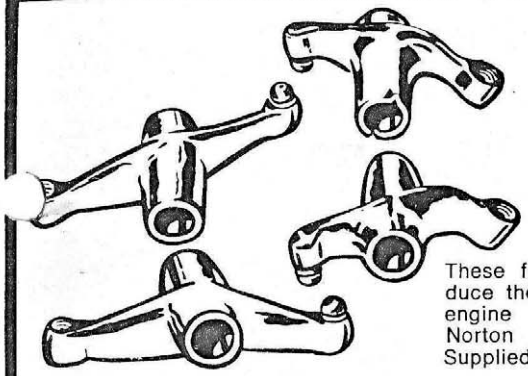


Takes a high pressure oil supply from the timing cover and delivers it, through specially calibrated banjo bolts, to the racing camshaft and the rockers. This provides a constant oil supply to each cam lobe, minimising friction and wear.

ROCKER OIL PRESSURE FEED KIT



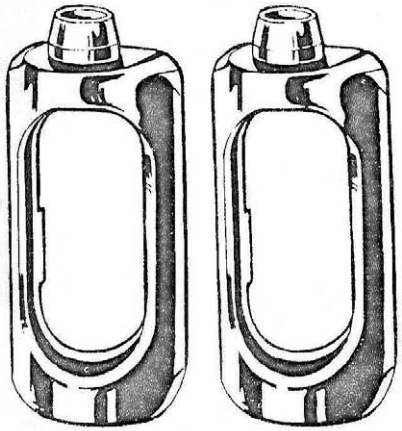
Supplies oil under pressure from the timing cover to the rockers. Manufactured from high pressure nylon tubing with brass unions and specially jetted banjo bolts. Available to fit Norton models 88, 99, 650 and 750



LIGHTENED ROCKERS

These fully lightened and polished rockers reduce the load on the valve gear and allow the engine to run at higher r.p.m. Suitable for Norton models 7, 77, 88, 99, 650 and 750. Supplied in exchange for standard rockers

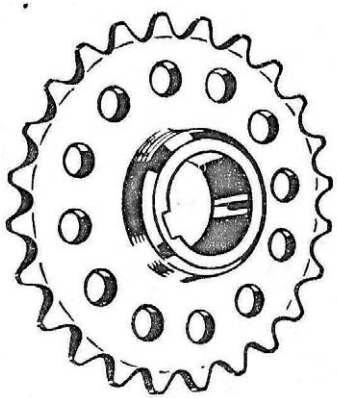
LIGHTENED CAMFOLLOWERS



These lightened camfollowers reduce the load on the valve springs, allowing higher rpm without overloading the valve springs.

Available for all Norton Dominators.

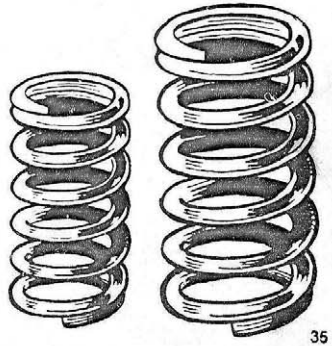
ENGINE SPROCKETS



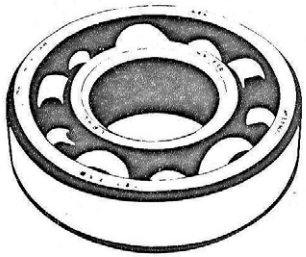
Available from 17 through to 25 teeth. For all Norton Dominators, giving a very wide choice of overall gearing.

DUAL RATE VALVE SPRINGS

Allow higher r.p.m. without valve float. Available to fit Norton models, 88, 99, 650 and 750.

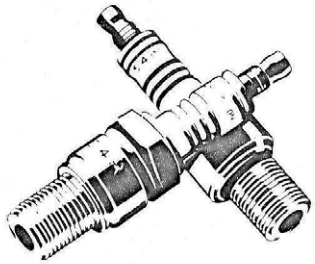


HIGH CAPACITY MAIN BEARING



This timing side main bearing has a 20% greater load capacity than standard. This is achieved by the use of finer tolerances and a special cage which uses 10 balls instead of the standard eight.

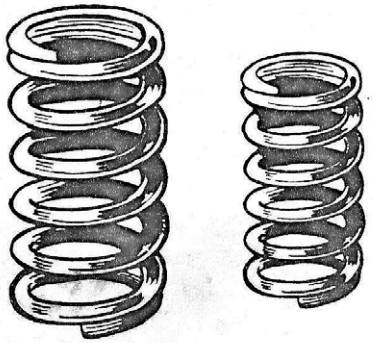
CHAMPION RACING PLUGS



These world famous racing plugs are used by many successful teams. Fitted to our own Domiracers they helped us to score 17 outright wins during 1968. Long reach types N 57 R, N 54 R and N 52 R available.

N G K COMPETITION SPARK PLUGS

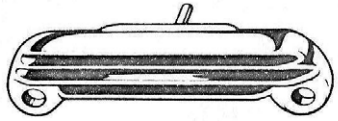
These competition spark plugs have a very wide heat range which makes them suitable for both town and motorway riding. The special design also makes for easier starting. Suitable for Triumph, Norton and B.S.A. twins.



S AND W VALVE SPRINGS

Undoubtedly the most successful valve springs ever produced, and used by numerous works teams. Allow high r.p.m. without absorbing extra power. Available to fit Triumph and Norton twin.

FINNED ROCKER FEED

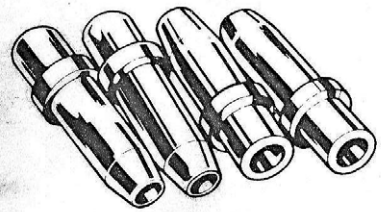


Cast in light alloy, finned and polished to blend with the cylinder head. It lowers the temperature of the oil being fed to the rockers. Available to fit all unit construction 650 and 500 Triumphs from 1960 onwards

TRIUMPH POINTS COVER

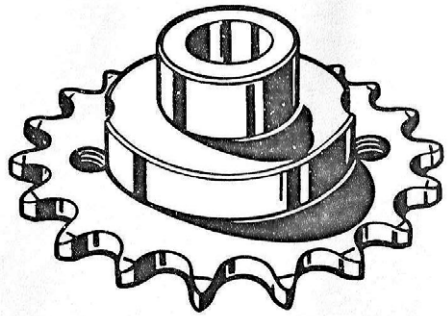
Finned alloy casting will fit all unit construction Triumphs.

BRONZE VALVE GUIDES



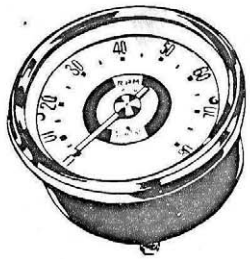
Manufactured from bronze "Hi-Dural Five (Regd)" material. They improve valve cooling and lessen wear.

MAGNETO SPROCKET



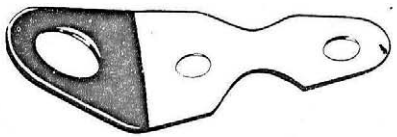
Fixed ignition timing magneto sprocket. Replaces the automatic advance and retard unit. Essential for racing Dominators.

REVCOUNTER INSTRUMENT

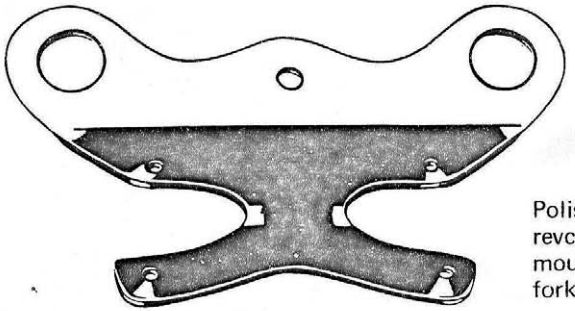


The latest Smiths magnetic type revcounter head. Calibrated from 0 to 8,000 r.p.m. Available for Norton machines.

SINGLE REVCOUNTER BRACKET



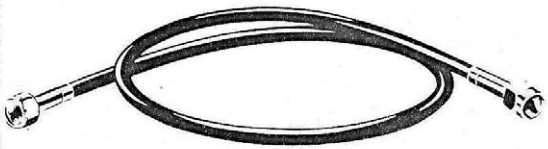
Polished alloy bracket enabling the revcounter instrument to be mounted on the top of the forks.



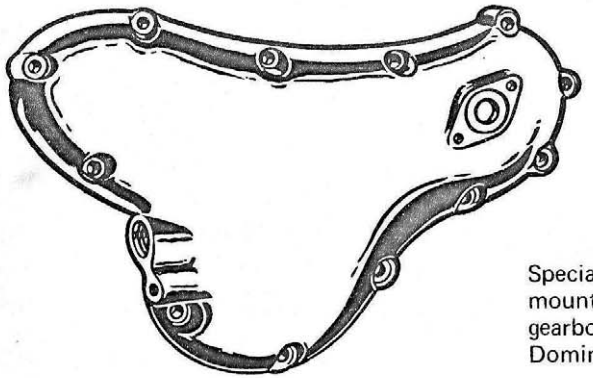
DUAL REVCOUNTER BRACKET

Polished light alloy bracket enabling the revcounter and speedo instruments to be mounted side by side on the top of the forks.

REVCOUNTER CABLE



Complete inner and outer cable to transfer drive from revcounter gearbox to instrument.

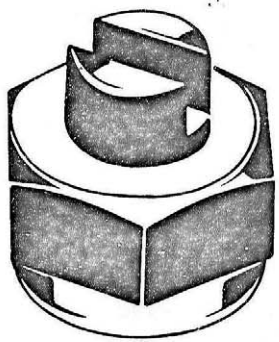


REVCOUNTER TIMING COVER

Special timing cover incorporating a mounting boss for revounter drive gearbox. Available to fit all Norton Dominators.

REVCOUNTER DRIVE NUT

Special camshaft end nut incorporating a drive slot to suit the drive from revcounter gearbox. For all Norton Dominators.



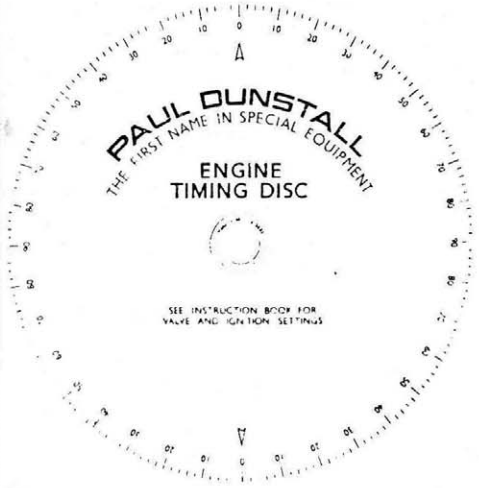
REVCOUNTER GEARBOX

Fits onto the special timing cover and takes the drive from the camshaft end nut to the revcounter cable. Available for all Norton Dominators.

ALLEN SCREWS

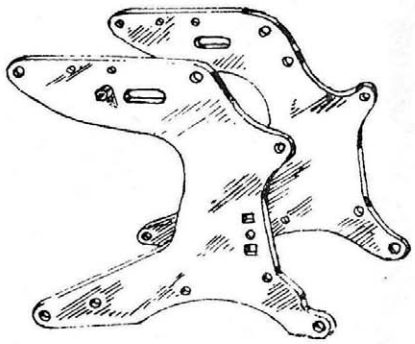
They replace the standard headed screws enabling the timing cover to be uniformly tightened. Suitable for all Norton Dominators.

ENGINE TIMING DISC



A white plastic timing disc which is clearly marked to ensure really accurate valve and ignition timing.

DURAL ENGINE PLATES

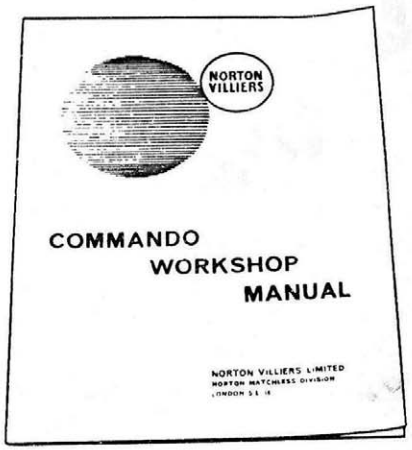


Manufactured from aircraft quality dural sheet 60% lighter than steel engine plates.

CASTROL 'R'

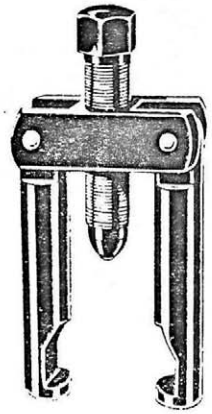
The most famous vegetable based oil in the world, and used by many successful racing teams. Available in one gallon cans, S.A.E. 30 and S.A.E. 40 grades.

WORKSHOP MANUAL



This 85 page workshop manual is a must for all Norton owners. It contains a wealth of information that will save you a great deal of time. Norton models 88, 99, 650S/S and 750 Atlas. Also available for Commando.

SPROCKET EXTRACTOR

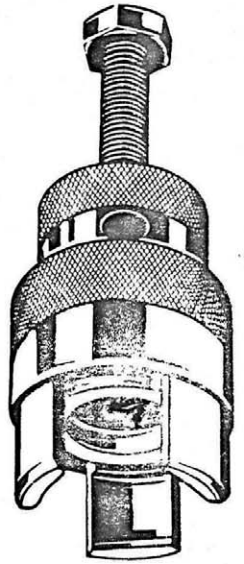


Heavyweight extractor specially designed to remove the engine sprocket from it's taper.

PINION EXTRACTOR

This tool is essential for removing the timing pinion from the mainshaft on a Norton.

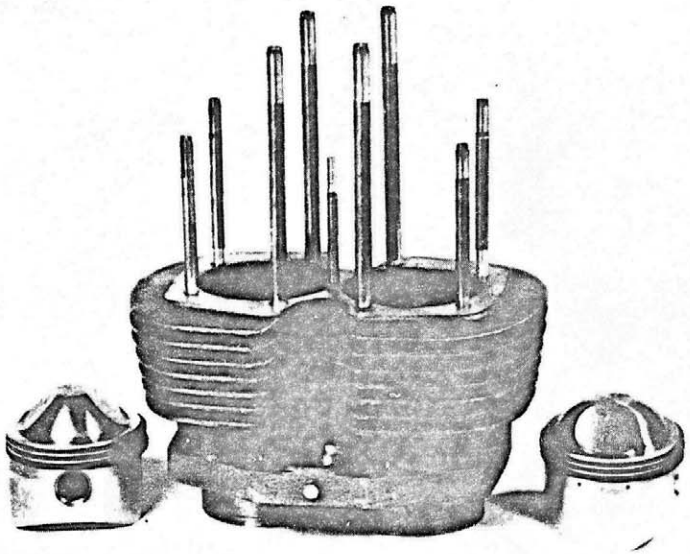
CLUTCH EXTRACTOR



Screws into centre of clutch body to enable easy extration from the splines.

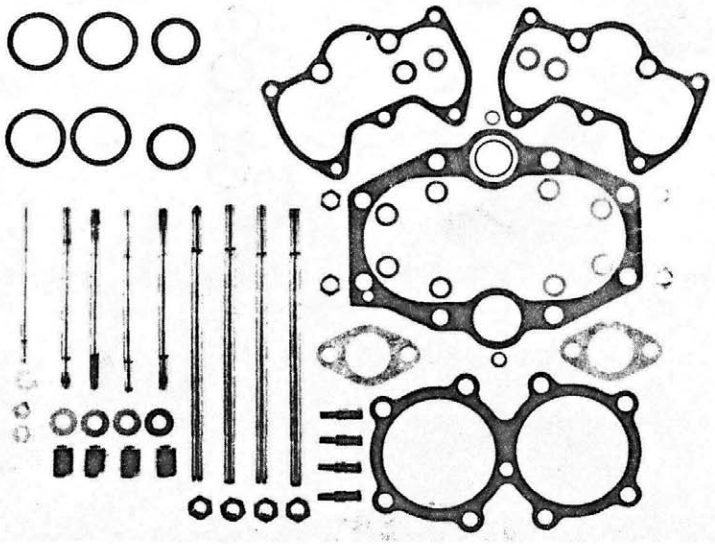
CYLINDER HEAD SPANNER

Box spanner to fit the three cylinder head nuts concealed in the fins on Norton Dominators.

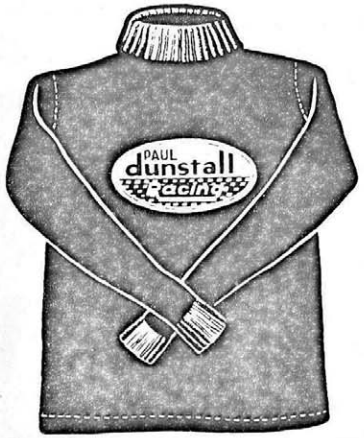


Complete cylinder conversion kit suitable for all Triumphs with nine stud head. 76mm bore size gives a capacity of 744cc. Kit consists of:—

Cast aluminium cylinder barrel with steel liners which increases the capacity to 744cc and is only half the weight of the standard 650 barrel. 9 to 1 compression ratio pistons complete with rings, gudgeon pins and circlips. Solid copper head gasket, and larger main jets for the carburettors are also included, together with all necessary studs, nuts and washers.



DUNSTALL SWEATER



Roll neck, long-sleeved rayon sweater. Available in black or orange, with badge.

DUNSTALL RACING BADGE

This very attractive badge finished in orange, black and white is available in
Self adhesive cloth badge 3½" x 2½".
Waterslide ready varnished transfer 3½" x 2½".

LAPEL BADGES

Two types available, both chrome plated and stove enamelled. Illustrated actual size.

DUNSTALL TRANSFERS

Finished in red, white and black these transfers measure 4" x 2½". Easily fitted, just soak in water and then slide on. They are already varnished so that once they dry out they become permanently fixed, suitable for tank or helmet.

PRESS REPORTS:

DUNSTALL MACHINES

Built in England, the Dunstall machines are high performance motorcyles tailored to suit the requirements of each owner. Renowned throughout the world for their unequalled performance, superb finish and undoubted reliability.

Each machine is hand built by a small team of craftsmen using the best and latest Dunstall equipment and working under ideal conditions without any pressure or interference from outside. The only requirement being that each completed motorcycle must measure up to our high standard of quality in every respect.

Normal considerations of cost and time are disregarded so that we can be sure that each machine gives reliable performance in whatever part of the world it is destined for.

Our only disadvantage is that since we do not resort to mass production methods, so you will have to be patient as delivery usually takes eight to ten weeks from the receipt of order.

The same methods were used to build our own Dunstall racing machines enabling us to win 17 major races during 1968, including the Isle of Man Production TT the International Hutchinson 100.

It's now a matter of history that back in 1967 a 750cc Dunstall Norton Street machine, equipped with all street equipment including lights and silencers, established a new world one hour speed record: It covered over 126 miles in one hour from a standing start. It's worth remembering that not many street machines will achieve 126 m.p.h. and certainly no other one has managed to average that speed for one whole hour.

"If you want one of these incredible joys, it will only cost you a few dollars more than a stock model costs you retail here".
—Car and Driver Magazine.

"In an age of fun machines, the Dunstall Sprint represents the supreme symbol of virility with its barrel-chested power, marathon stride and perfect manners".
—Cycle Guide.

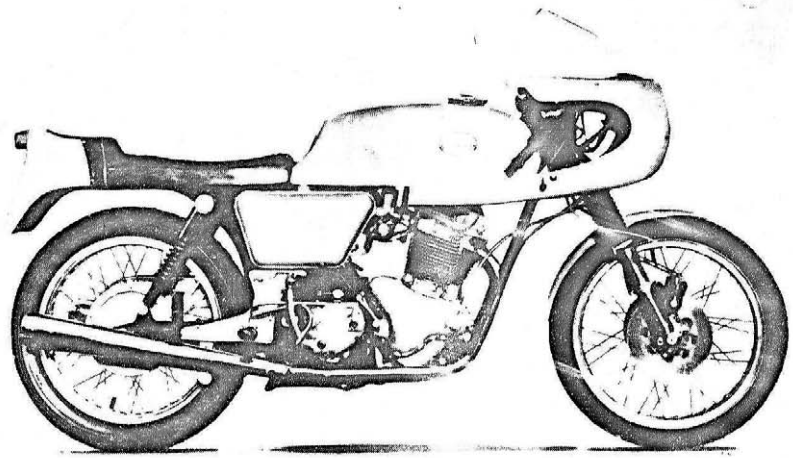
"The quest for performance is endless. Why anyone should want to pep-up a 58 b.h.p. roadster that already tops 115 m.p.h. flat out, cruises at a ton and reaches 98 m.p.h. in a quarter—mile may seem puzzling—until you thrill to the full use of 63 b.h.p. by exceeding two miles a minute, cruising at 110 m.p.h. and getting firmly into the three-figure bracket in 440 yards".
—Motor Cycle.

"This then, is the Dunstall Norton—a specialist mount for those who want more suds than any other current production machine can offer. Dunstall makes no proud claims, but he could justifiably say it is the fastest machine generally available anywhere in the world today".
—Cycle World.

"The Dunstall Domiracer is the ultimate in high-speed motorcycling and can be likened to the E-Type Jag or Aston Martin in the sports car world".
—Cycle Guide.

"With a genuine top speed of 130 m.p.h., a twin disc hydraulic front brake and true, functional good looks, the Paul Dunstall Norton Commando has everything". "By adding 100cc to the already powerful Triumph Bonneville, London dealer Paul Dunstall has turned out the most exiting Triumph road bike ever produced."
—Motor Cycle News.

DUNSTALL NORTON COMMANDO



Brief Specification

Norton 750 engine.
Bore 73mm. Stroke 89mm.
Capacity 745cc.
Hand finished and polished ports.
Lightened and polished rockers.
Special "H 18 S" material valves.
Bronze "Hi-Dural 5" valve guides.
Special dual rate valve springs.
Finned induction manifolds.
10 to 1 compression, spun cast pistons.
Lucas capacitor ignition system.
Lightened camfollowers.
Street high lift camshaft.
Paired Amal 932/901 type concentric carburettors.
Flexible forced oil feed to rockers.
Champion N6Y wide heat range plugs.
Output 66 b.h.p. at 7,000 r.p.m.

GEARBOX

Four speed semi close ratio:—

Top	4.38 speed =	125 m.p.h.
Third	5.35 speed =	103 m.p.h.
Second	7.45 speed =	77 m.p.h.
Bottom	11.2 speed =	48 m.p.h.

Alternative:—

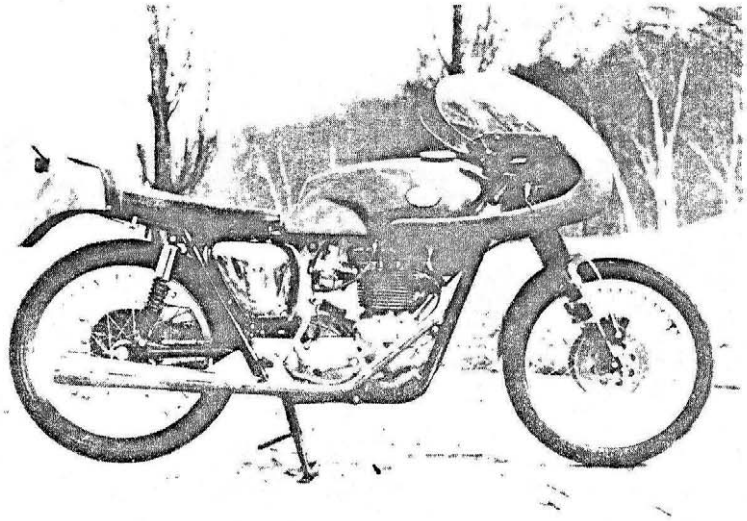
	4.84 speed =	115 m.p.h.
	5.90 speed =	93 m.p.h.
	8.25 speed =	67 m.p.h.
	12.4 speed =	44 m.p.h.

CYCLE PARTS

Norton Commando frame, stove enamelled black.
"Road holder" forks fitted with external fork springs and gaiters.
Twin 9" hydraulic disc brake.
G.T. fairing (colour choice).
Balanced exhaust system
"Decibel" silencers.
Rear mounted footrests and controls.
4 gallon capacity fuel tanks (colour choice).
Dunstall dual seat incorporating toolbox, number plate and rear mudguard (colour choice).
Glass-fibre front mudguard (colour choice)
Clip-on handlebars with alloy control levers.
Alloy fork top yoke.
Polished alloy wheel rims.
Avon G.P. rear tyre.
Chromium plated chainguard.

Alternative model available with twin leading shoe brake in place of the twin disc assembly.
The following choice of colours are available: red, yellow, racing green, silver or blue.

DUNSTALL TRIUMPH 750



Brief Specification

Triumph T.120 engine.
Aluminium cylinder barrel conversion.
Bore 76mm. Stroke 82mm.
Capacity 744cc.
Enlarged, reshaped and polished ports.
Bronze, "Hi-Dural", valve guides.
Special dual rate valve springs.
Finned induction manifolds.
Low expansion 9 to 1 compression pistons.
Lucas ignition system.
Paired Amal 930 carburettors.
N.G.K. plugs.

TRIUMPH B77EC GEARBOX

Top	4.46 speed =	128 m.p.h.
Third	5.31 speed =	106 m.p.h.
Second	7.55 speed =	76 m.p.h.
First	10.9 speed =	50 m.p.h.

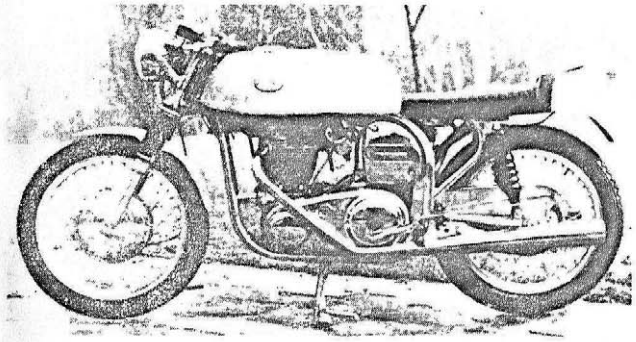
Alternative:–

4.88 speed =	155 m.p.h.
5.82 speed =	93 m.p.h.
8.25 speed =	67 m.p.h.
11.98 speed =	46 m.p.h.

CYCLE PARTS

Triumph T.120 frame, stove enamelled black.
Twin 9" hydrualic disc front brake.
Balanced exhaust system.
Dunstall 'Decibel' silencers (black or chrome).
Rear mounted footrests and controls.
4 gallon fuel tank. (choice of colours).
Dunstall seat incorporating toolbox (choice of colour).
Glass-fibre front mudguard (choice of colours.)
Clip-on handlebars.
Alloy fork top yoke.
Alloy levers.
Polished alloy wheel rims.
Avon G.P. rear tyre.
Dunstall G.T. fairing (choice of colours).
Chromium plated chainguard, oil tank and battery cover.

Alternative model available with twin leading shoe front brake in place of disc. The following colour choice is available on the glass-fibre components. Red, yellow, blue, racing green, silver or white.



DUNSTALL NORTON SPRINT

Brief Specification

Norton 750 engine
Bore 73mm. Stroke 89mm.
Capacity 745cc.
Hand finished and polished ports
Lightened and polished rockers
Special "H 18 S" material valves
Bronze "Hi-Dural 5" valve guides
Special dual rate valve springs
Finned induction manifolds
10 to 1 compression, spun cast pistons
Lucas Capacitor ignition system
Lightened camfollowers
Street high lift camshaft
Paired Amal 932/901 type concentric carburettors
Flexible forced oil feed to rockers
Champion N6Y wide heat range plugs
Output 66 b.h.p. at 7,000 r.p.m.

GEARBOX

Four speed semi close ratio:–

Top	4.53 speed =	124 m.p.h.
Third	5.5 speed =	104 m.p.h.
Second	7.65 speed =	74 m.p.h.
First	11.5 speed =	49 m.p.h.

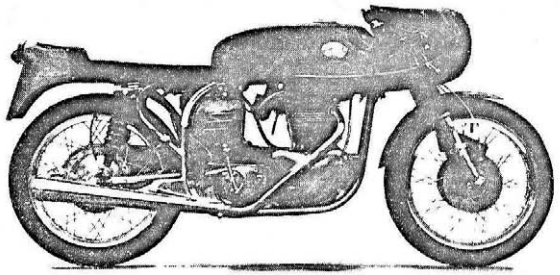
Alternative:–

4.96 speed =	113 m.p.h.
6.0 speed =	93 m.p.h.
8.4 speed =	67 m.p.h.
12.7 speed =	44 m.p.h.

CYCLE PARTS

Duplex "Featherbed" frame, chrome plated.
"Road-holder" forks fitted with twin leading shoe brake.
Balanced exhaust system or upswept, one side system.
"Decibel" silencers.
Rear footrest kit, or forward footrests with upswept pipes.
3½ gallon lowline, 4 gallon or 5 gallon tank (choice of colours).
G.T. dual-seat incorporating mudguard, toolbox and number plate (choice of colours.
Chrome headlamp assembly.
Chrome dual instrument bracket.
Manx front mudguard, or glass-fibre mudguard (choice of colours).
Semi-straight handlebars, high bars, or clip-ons.
Chrome headlamp brackets.
Chrome or alloy ball-ended control levers.
Friction steering damper.
Alloy fork top yoke.
Alloy wheel rims.
Avon G.P. rear tyre, or 4.00 x 18 Avon tyre.
Suspension gaiters front and rear, black or red.
Cibie light unit
Chrome plated chaincase, chainguard, battery box and oil tank.
The following choice of colours are available:- red, yellow, racing green, silver or blue.

EXPORT 750



Brief Specification

Norton 750 engine.
Bore 73 mm. Stroke 89m,.
Capacity 745cc.
Hand finished and polished ports.
Lightened and polished rockers.
Special "H 18 S" material valves.
Bronze "Hi-Dural 5" valve guides.
Special dual rate valve springs.
Finned induction manifolds.
10 to 1 compression, spuncast pistons.
Lucas Capacitor ignition system.
Lightened camfollowers.
Street high lift camshaft.
Paired Amal 932/901 type Concentric carburettors.
Flexible forced oil feed to rockers.
Champion N6Y wide heat range plugs.
Ouput 66 b.h.p. at 7,000 r.p.m.

GEARBOX

Four Speed Semi Close Ratio:—

Top	4.22 speed =	131 m.p.h.
Third	5.14 speed =	109 m.p.h.
Second	7.12 speed =	78 m.p.h.
First	10.75 speed =	52 m.p.h.

Alternative:—

4.53 speed =	124 m.p.h.
5.5 speed =	104 m.p.h.
7.65 speed =	74 m.p.h.
11.5 speed =	49 m.p.h.

CYCLE PARTS

Duplex "Featherbed" frame, chrome plated.
"Road-holder" forks.
Twin 9" hydraulic disc front brake assembly.
Swept back, balanced exhaust system
"Decibel" silencers.
Rear mounted footrests and controls.
De-Luxe or G.T. fairing (choice of colours)
3½, 4 or 5 gallon fuel tank (choice of colours).
G.T. dual-seat with mudguard, toolbox etc. (choice of colours).
Grand Prix. Manx or glass-fibre mudguard. (choice of colours).
Clip-on handlebars.
Alloy ball ended control levers.
Steering damper assembly.
Alloy fork top yoke.
Alloy wheel rims.
Avon G.P. rear tyre.
Front fork and suspension gaiters (red or black).
Chromium plated chaincase, chainguard, oil tank and battery box.
The following choice of colours is available: Red, yellow, racing green, silver or blue.

IMPORTANT NOTICE ▶