

INSTRUCTIONS FOR 650 TRIUMPH BIG BORE KIT

KITS INCLUDE A NEW CYLINDER CASTING, PISTONS, RINGS, CIRCLIPS, HEAD GASKET , HEAVY ADVANCE SPRINGS, ONE 1/4" X 20 THREE INCH ALLEN BOLT, REDUCING WASHER AND ONE OIL BLANKING DOWEL. OIL DOWEL IS USED ON THE 1966 AND LATER ENGINES. THE 1/4" BOLT REPLACES THE STOCK 5/16" CENTER HEAD BOLT. TORQUE 1/4" BOLT TO 8 LBS. PISTONS ARE FITTED FOR NORMAL BREAK IN. INCREASE CLEARANCE FOR RACING AND HARD USE. WE RECOMMEND EITHER THE CAST OR TRW FORGED 9 1/2-1 PISTONS WITH THE COMPRESSION LOWERING KIT FOR STREET USE. THE 9 1/2"-1 FOR LONG RACING AND THE 10 1/2-1 COMPRESSION FOR DRAGS AND HILL CLIMBS. JAHN'S FORGED ARE RECOMMENDED FOR FUEL RACING. TRW FORGED PISTONS ARE MADE FROM A HIGH SILICON CONTENT ALLOY AND CAN BE FITTED WITH LESS CLEARANCE THAN OUR JAHN'S PISTONS.

CLEARANCE THRU 1972 650 CC MODELS

PISTON TYPE

PISTON CLEARANCE

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| 9 1/2 -1 CAST JAHN'S | .0045 TO .005 |
| 10 1/2-1 CAST JAHN'S | .0055 |
| 9 1/2-1 FORGED JAHN'S | .0055 TO .006 |
| 10 1/2-1 FORGED JAHN'S | .0065 |
| 9 1/2-1 FORGED TRW | .004 TO .0045 |
| 10 1/2-1 FORGED TRW | .005 TO .0055 |



ALL CLEARANCES ARE MEASURED AT THE BOTTOM OF THE SKIRT, AT RIGHT ANGLES TO THE WRIST PIN.

PISTONS AND RINGS ARE INSTALLED IN THE CYLINDER BORES FOR SHIPPING ONLY. DEBURR PISTONS IF NECESSARY. CHECK CIRCLIP GROOVES BY INSTALLING THE EXTRA CIRCLIP SUPPLIED. INSTALL EXTRA CIRCLIP INTO EACH CIRCLIP GROOVE TO MAKE SURE IT WILL SEAT PROPERLY. ROTATE CIRCLIP AS THIS HELPS SEAT AND DEBURR GROOVE. REMOVE CLIP AND CLEAN PISTONS. DON'T USE THIS OR ANY USED CIRCLIP OVER AGAIN. PISTONS, RINGS, AND CYLINDER BORE SHOULD BE CLEANED AND ALL PARTS OILED BEFORE ASSEMBLY. NOTE... TWIN CYLINDER BORE KITS ARE PAINTED AND SOLVENTS WILL REMOVE FRESH PAINT.

HEAD GASKETS CAN BE SUPPLIED TO RAISE OR LOWER COMPRESSION. FOUR SIZES, .016, .021, .027, .032 AND THE STOCK KIT .043 ARE AVAILABLE. EACH .010 CHANGES THE COMPRESSION APPROXIMATELY 1/4 OF A POINT IN RATIO. WE RECOMMEND LOWERING COMPRESSION RATIOS TO UNDER 9-1 FOR STREET USE. THIS CAN BE DONE BY ADDING A SECOND HEAD GASKET TO THE STOCK ONE. THE .027 OR .032 ARE RECOMMENDED. OUR COMPRESSION LOWERING KIT IS A .032 HEADGASKET AND PUSHROD TUBE SPACERS. (SAME AS THE T160 USES)

BIG BORE PISTONS HAVE ADDITIONAL VALVE TO PISTON CLEARANCE. WHEN INSTALLING HIGH LIFT CAMSHAFTS, VALVE TO PISTON CLEARANCE SHOULD BE CHECKED. AT TOP DEAD CENTER WITH THE VALVES OPEN THE INTAKE SHOULD HAVE .070 CLEARANCE AND THE EXHAUST .080. STOCK VALVE SPRINGS SHOULD BE REPLACED WITH RACING TYPE SPRINGS WHEN HIGH LIFT HARD FACED CAMS ARE INSTALLED.. HEAVY V/SPRINGS ARE NOT RECOMMENDED FOR STOCK CAMS.

750CC DROP ON KITS WILL FIT ANY UNIT CONSTRUCTION 650CC TRIUMPH WITH NO CRANKCASE MACHINING NECESSARY. FROM 1969 ON, TRIUMPH USES 3/8" X 24 CRANKCASE STUDS AND TWELVE POINT NUTS. OUR DROP-ON 750CC CYLINDER HAS BEEN MACHINED TO USE THESE TWELVE POINT NUTS. THE 1968 AND EARLIER TRIUMPH USE 3/8" X 26 ENGLISH STUDS AND NUTS. WITH FOUR LARGER OUTER AND FOUR SMALL INNER NUTS. WHEN INSTALLING A DROP-ON KIT ON A 1968 OR EARLIER TRIUMPH YOU MUST USE THE SMALL BASE NUTS ON ALL 8 STUDS. SMALL BASE NUTS ARE TRIUMPH PART #37-0076 (STOCK ON THE FOUR INNER BASE NUTS THRU 1968) OR SUBSTITUTE WITH 70-2412 (STOCK STA TRIUMPH BASE NUTS) OR COLONY PART #7019-16 ENGLISH THREAD. 1969 ON CAN USE THE 12 POINT STOCK BASE NUTS OR THE COLONY PART #7018-16 NUTS. SOMETIMES WHEN USING THE STOCK 12 POINT BASE NUTS, A HALF INCH WRENCH HAS TO BE GROUND TO CLEAR THE CYLINDER BLOCK. ALL 1962 AND EARLIER PRE-UNIT CRANKCASES HAVE TO BE MACHINED FOR ALL BIG BORE KITS. COLONY BASE NUTS SHOULD BE MACHINED FLAT ON THE BOTTOM BEFORE USING. CHECK COLONY DOME AS THEY MAY HAVE TO BE MACHINED TO CLEAR FLAT IN CYLINDER. FLAT WASHER REQUIRES A RADIUS AND GRINDING FOR CLEARANCE NEXT TO THE CYLINDER BLOCK. CHECK AND GRIND AS NECESSARY.

800CC CYLINDERS HAVE A LARGER SPIGOT DIAMETER THAN THE 750 DROP-ON KITS. CRANKCASES MUST BE MACHINED 1/32" LARGER THAN THE SPIGOTS. AVERAGE 800CC SPIGOT DIAMETER 3.200. BORE TO A DEPTH OF 1.250. CYLINDER SHOULD BE FITTED TO CASES BEFORE MOTOR ASSEMBLY. WITH THE BASE STUDS IN PLACE. CYLINDERS SHOULD EASILY GO DOWN ON THE CASES WITHOUT TOUCHING THE CASES. SOMETIMES THE TWO INNER 1/4" CRANKCASE SCREWS BETWEEN THE TAPPET BLOCKS HAVE TO BE REMOVED AND THE CAST AREA OF THE CASES BETWEEN THE TAPPET BLOCKS HAVE TO BE GROUND FOR CLEARANCE.

WARNING: BE CERTAIN WHEN INSTALLING A 750CC THRU 825CC BIG BORE KIT ON A 650/750CC ENGINE THAT THE CRANKCASES ARE A MATCHED SET FROM THE FACTORY. AS THESE MODELS ARE GETTING OLDER WE ARE FINDING THAT CUSTOMERS ARE REPLACING ONE HALF OF THE CASES AND THAT THE CYLINDER BASE SURFACE OF THE C/C ARE NOT FLAT AND REQUIRE RESURFACING. ANY MIS-MATCHED BASE SURFACE CAN CAUSE CYLINDER FATIGUE AND EVENTUALLY WILL CAUSE CASES OR CYLINDER BREAKAGE. THIS IS THEN A VERY COSTLY MATTER AND WE WILL NOT WARRENTY ANY PARTS. WE HAVE FOUND EVEN STOCK NEW CRANKCASES TO BE OVER .005 OUT OF FLATNESS. REMEMBER CAST IRON CYLINDERS OR CAST ALUMINUM CASES WILL NOT BEND, THEY ONLY BREAK. BORE KITS ARE ONLY WARRANTIED AGAINST DEFECTS IN WORKMANSHIP AND MATERIAL. NOTHING CAN BE WARRANTIED AFTER INSTALLATION. DO NOT ISTALL A DEFECTIVE PART AND THEN WAIT FOR SOMETHING TO HAPPEN. WE ARE UNABLE TO CONTROLL THE USE OF OUR PARTS, THE INSTALLATION OR THE TUNING OF ANY PARTS WE SELL. THEREFORE WE ARE UNABLE TO OFFER ANY WARRENTY.

AN AUTOMATIC ADVANCE IS REQUIRED. MAGNETOS WITHOUT AN ADVANCE SYSTEM ARE NOT RECOMMENDED FOR STREET USE. ELECTRONIC IGNITIONS, BOYER AND LUCAS ARE EQUIPTED WITH AN ADVANCE SYSTEM. WHEN USING THE STOCK TRIUMPH POINT TYPE IGNITIONS, INSTALL OUR HEAVY AUTO ADVANCE SPRINGS. THEY ARE INCLUDED WITH ALL OF OUR BIG BORE KITS.

CAUTION: TAKE CARE NOT TO LUG OR OVERHEAT MOTOR DURING BREAK-IN. LISTEN FOR PINGING (SPARK KNOCK). SPARK KNOCK CAN RUIN YOUR ENGINE. OVERHEATING CAN MELT A HOLE IN A PISTON/S. OVERHEATING OCCURS MOST ON HOT DAYS, RIDING AT HIGHWAY SPEEDS OR ABOVE. RIDING DOUBLE AND ON LONG PULLS. WE RECOMMEND AN EXTERNAL OIL FILTER AND OIL PRESSURE GAUGE. AN OIL COOLER MAY BE A GOOD IDEA IF YOU RIDE ON THE HIGHWAY. REMEMBER THIS MOTOR HASEN'T CHANGED A LOT IN YEARS. IT IS NOT WATER COOLED, DOES NOT HAVE AN OIL FILTER OR MUCH OF AN ADVANCE SYSTEM AND A PLUNGER TYPE OIL PUMP WITH A SPRING, BALL AND SEAT THAT CAN BE AFFECTED BY DIRT. PROTECT YOUR INVESTMENT. KEEP IT COOL AND CLEAN..... THANKS FOR YOUR INTEREST IN OUR PRODUCTS.