



**STAGE 2 CARBURETOR KIT INSTALLATION INSTRUCTIONS FOR THE  
2002 thru 2004 TRIUMPH BONNEVILLE AMERICA/SPEEDMASTER**

**Shipping Inventory for Stage 2 Carburetor Kit MATT HEYER**

<b>Modified Stage 2 Bonneville Performance Mikuni HSR 42mm Carburetor Kit 2, 42mm Polished HSR Mikuni Carburetors</b>
<b>EBOC Breather Kit</b>
<b>Barnett Throttle Cables--1 push pull 1 idle</b>
<b>Joker Machine throttle housing</b>
<b>Legends Classic Billet Grips</b>
<b>** The modified stage kit includes all the above and the following: 2 new port matched billet manifolds, 2 billet air-filter adapters, 2 hole-plugs for the stock switch housing, 2 replacement allen head screws for manifold rubber clamps 2 feet flex fuel line and 1 brass T-fitting—no clamps are necessary cut to fit 2 K&amp;N filters, 1 bracket assembly and fattener set for side panels, Rear fender extension—this section comes assembled with EBOC 2 additional main jets 160 (2 each). The assembled kit is already fitted with the top and bottom brace, choke assembly, throttle rod, replacement screws, spacers and synchronization adjuster. The pilot jet <u>20</u>, main jet <u>155</u>, needle jet <u>96</u> and accelerator pump nozzle <u>50</u> have already been replaced and positioned. This kit is jetted for the BUB Slash Cut or D &amp; D slip-on exhaust system.</b>

**I. REMOVAL INSTRUCTIONS OF REAR WHEEL, MUDGUARD, SEAT,  
SIDE COVERS, FUEL TANK AND AIRBOX FOR CERTIFIED TRIUMPH  
MECHANICS**

**Introduction- Bonneville Performance recommends that at all times during the installation that you refer to the Triumph Motorcycle Service Manual, part Number T3850902 Issue 2, 03/2002. And, I recommend that all work performed be conducted by a certified Triumph Motorcycle mechanic.**

**A.) REAR WHEEL REMOVAL- PAGE 14-16 Triumph Motorcycle Service Manual**

- 1.) Support motorcycle on center stand or center lift so rear wheel is suspended and there is clearance for removal. Use tie downs.
- 2.) If both wheels are raised chock the front wheel to prevent any weight shift when rear wheel is removed.
- 3.) Remove chain guard.
- 4.) Remove caliper and support so there is no strain on the brake line.
- 5.) Remove both silencers from exhaust headers.
- 6.) Remove axle nut and washer—support or chock rear wheel—and slide out axle.
- 7.) Disengage chain from sprocket and hang over swing—use soft cloth to protect swing arm from scratches that will occur if you do not cover.
- 8.) Lower wheel to the ground and collect spacer and caliper support arm and all fasteners for re-assembly.

#### **B.) REMOVE SEAT PAGE 15-9 Triumph Motorcycle Service Manual**

- 1.) Remove the 12 mm bolt from rear seat section—if you have a pillion pad remove it first by removing the 8 mm bolt, slide forward and lift free of seat catch. Take a position where you can see what you are doing or you will scratch your painted surface.
- 2.) Lift seat from the rear and slide backwards to disengage tongue-- collect all fasteners for re-assembly.

#### **C.) REMOVE REAR MUD GUARD PAGE 15-14 Triumph Motorcycle Service Manual**

- 1.) Disconnect battery and remove from motorcycle.
- 2.) Disconnect electrical connectors on the underside of the mudguard.
- 3.) Support fender from beneath and remove the 4 side allen head mount bolts and 2 12mm hex head top front mount bolts-- collect all fasteners for re-assembly.

#### **D.) REMOVE FUEL TANK PAGE 9-11 Triumph Motorcycle Service Manual**

- 1.) Turn off fuel tap.
- 2.) Remove fuel line at the tap connection.
- 3.) Remove the 12mm rear tank-mounting bolt.
- 4.) With assistance from another set of hands support tank at the rear and lift so that the breather line is visible on the right side of the underside of tank—remove and plug line.
- 5.) With tank raised and supported at the rear slide backwards—disengaging it from the front mounting rubbers—set tank aside in a safe place to prevent any damage to the painted surface.

**E.) REMOVE SIDE COVERS PAGE 15-10 and 9-15 Triumph Motorcycle Service Manual**

- 1.) Loosen and remove left side cover screws on the air filter facade— lift slightly to disengage top mounts and remove—set aside in a safe place to prevent damage to painted surface.
- 2.) On right side cover simply and gently pull bayonet fittings from rubber slip mounts.
- 3.) Secure these rubber mounts and remove for later re-assembly with the Bonneville Performance brackets.

**F.) REMOVE AIRBOX PAGE 9-15 Triumph Motorcycle Service Manual**

- 1.) Remove carburetor breather line to airbox.
- 2.) Pull back and remove rubber connectors from the airbox to bell of both carburetors—there may be a lot of factory glue in this area that is used to seal and support the carburetors with these rubber airbox connectors so you may need to manipulate the connectors to remove them without damaging the rubber.
- 3.) Remove the electrical connectors from both sides of airbox—note placement as the replacement brackets have the same or similar mounts for these connectors.
- 4.) Support airbox at the base so it does not drop then remove the top fasteners that secure airbox to top section of frame at the rear fender area--see page 9-16
- 5.) Support your swing arm section and remove your rear shocks.—see page 9--16
- 6.) The airbox is now free to be removed through the rear wheel area.
- 7.) Remove the rubber grommets from both sides of the airbox that are utilized for the slip fit on the side panels—you will need these for reassembling your side panels in conjunction with the brackets in the Bonneville Performance kit.
- 8.) Remove the rubber cups on both sides of the frame center section that were used to support the airbox. There is a quantity of adhesive so these cups will be a little stubborn but with a little patience they will come free.
- 9.) This hole will be used to mount the center bracket piece provided in the stage 2-carb kit.

**E.) REMOVE THROTTLE CABLES PAGE 9-19 Triumph Motorcycle Service Manual**

- 1.) Open right side switch housing and remove throttle assembly and throttle grip from handlebars.
- 2.) Replace fasteners and close switch-assembly.

- 3.) Place two black hole-plugs provided in the openings in the switch assembly created by removing the stock throttle cables.

**F.) REMOVE CARBURETORS PAGE 9-21 Triumph Motorcycle Service Manual**

- 1.) Disconnect Throttle Position Sensor connector and heater connector from stock carburetors.
- 2.) Loosen hose clamps between carburetor manifolds and carburetors on the manifold rubbers.
- 3.) Slip off the carburetor assembly and set aside.
- 4.) Remove manifold fasteners and stock manifolds.
- 5.) Set aside manifold rubbers, hose clamps and stock manifold fasteners for use in the assembly of the Bonneville Performance stage 2-carburetor kit.

**II. INSTALL BONNEVILLE PERFORMANCE STAGE 2 CARBURETOR KIT**

Please note that the stage 2-kit comes assembled, jetted and bench synchronized for the Bonneville engine that has been fitted with an aftermarket exhaust system—this includes the Triumph off-road silencers. The jetting has been determined through exhaustive dynamometer tuning. There should be no need to change pilot jets, needle jets or accelerator pump nozzles. Depending on the exhaust system there may be a need to change the main jet—it is currently a 155—160, 150 and 145 main jets are provided if there is a need to rejet for top end performance. A Mikuni 42mm HSR Carburetor tuning manual is provided for reference and the Bonneville Performance Sudco International representative, Mike Gaffney, is available for tech support at 323- 728-5407 between 9am & 5pm PST. I am also available for any questions regarding the carb kit.

- A.) Loosen and remove steady bolt above carburetors that attaches the rear section of the engine to the frame.
- B.) Remove the rear engine mount bracket by removing the 2 top frame section bolts.
- C.) Install the Bonneville Performance stainless steel replacement rear engine mount bracket using the stock fasteners.
- D.) Install Bonneville Performance manifolds—insure o-rings are seated and connecting engine surface is clean—attach with stock manifold fasteners.
- E.) Inspect stock manifold rubbers for any damage or wear—replace if necessary.

- F.) Attach manifold rubbers to new Bonneville Performance manifolds and snug front hose clamp so that it will not slip off manifold surface. Use replacement 4 allen head screws provided for your manifold rubber clamps**
- G.) Slide on the assembled Bonneville Performance stage 2-carb kit so that the top stainless steel mounting bracket is in line with the rear engine steady bolt area. If you prefer it is easier to install your throttle cables at this point on the carburetors—prior to mounting the carb kit to the engine. See steps P thru V below.**
- H.) Support carburetors and insert steady bolt through top carburetor bracket and engine support and tighten to proscribed torque setting.**
- I.) Align and tighten both manifold rubber hose clamps on both carburetors.**
- J.) Insure that o-rings are seated in both air-filter adapters and press on adapters to each carburetor bell. Insure that the adapters are completely on the bell section. Use a soft end mallet to accomplish the installation.**
- K.) The replacement bracket assembly unit is shipped to you in the correct configuration. Please make note of this if you decide to disassemble it for installation purposes.**
- L.) Insert the Bonneville Performance replacement center bracket assembly by aligning the bolt with the backbone frame hole where the two stock airbox rubber cups were removed. Use anti-seize on the threaded sections of the unit. This bracket assembly has been intentionally machined to allow for slight differences in dimensions on each motorcycle. Do not fully tighten the center bolt and the right and left side panel brackets to the centerpiece until you have mounted your air filters and test fit your side panels to insure correct alignment.**
- M.) Insert bolt through this hole and tighten fastener. Align the bracket as you tighten it.**
- N.) Re-attach electrical connector in the location at the center rear of the new bracket.**
- O.) Use the rubber grommets from the stock airbox in the holes provided in the Bonneville Performance brackets.**

- P.) Attach the stainless steel rear fender extension and EBOC mounting section using the stock fasteners. These are the fasteners that were used to hold the stock airbox in place on the frame section just below the rear fender fastener location.**
- Q.) Attach the 2-foot section of braided stainless dash-8 line to the engine breather connection. This is a tight fit at the engine case fitting--so loosen the clamp to its fullest extension without disengaging it. Lubricate the nipple that it connects to and slip on. Insure that that the line is seated completely in the slip clamp and rotate the clamp to a position where it is easily tightened. Do not tighten until you have fitted the other end (blue clamp) on to the EBOC nipple. Insure the line is seated, rotate the clamp to a position that will allow you to tighten it and tighten at both ends.**
- R.) Before zip tying the breather line to the frame place a buffer zip tie around the line where it will rest against the frame section so there is no friction between the line and the frame.**
- S.) Open right side switch housing and remove the stock throttle cables from the switch/throttle housing assemble.**
- T.) Remove stock throttle grip from bars.**
- U.) Lubricate new Barnett idle and push/pull throttle cables provided.**
- V.) Attach idle cable to throttle advance on the carburetor kit.**
- W.) Attach push-pull cable to throttle advance on the carburetor kit.**
- X.) Align cables and route along frame backbone to the new throttle housing assembly.**
- Y.) Note the cables thread into the housing at the base and there is a different OD for each cable to insure proper placement. In the housing.**
- Z.) Attach cables to new throttle grip provided and seat inside housing body and attach top portion to close the housing.**
- AA.) Check alignment of cables and adjust for smooth pull and return.**
- BB.) Zip tie cables on frame backbone where appropriate.**
- CC.) Remove the other stock grip and replace with new left-side handlebar grip provided.**

**DD.) Install K&N filters—insure that offsets are on the air-filters are placed on the correct side so that the side covers will mount with no interference from filter bodies. Note that the Bonneville Performance air-filter adapters are grooved to match the K&N mounting grooves. Insure that these grooves align and are seated before tightening the clamps. Also insure that the clamp is forward on the mounting surface before tightening.**

**III. THE MOTORCYCLE IS NOW READY TO BE RE-ASSEMBLED IN THE REVERSE ORDER OF DISASSEMBLY.**

- 1.) REPLACE BATTERY IN BATTERY BOX—DO NOT RECONNECT TO THE TERMINALS UNTIL THE FENDER IS REPLACED AND THE REAR LIGHT CONNECTORS ARE RECONNECTED. WHEN CONNECTED REPLACE SAFETY STRAP IN THE LOCATIONS PROVIDED ON THE BATTERY BOX.**
- 2.) REPLACE REAR MUD GUARD--PAGE 15-13 TRIUMPH MOTORCYCLE SERVICE MANUAL—REVERSE ORDER IN REMOVAL SECTION ABOVE.**
- 3.) REAR WHEEL REPLACEMENT, REAR BRAKE CALIPER RE-ASSEMBLY AND CHAIN CONNECTION--PAGE 14-15 TRIUMPH MOTORCYCLE SERVICE MANUAL--REVERSE ORDER IN REMOVAL SECTION ABOVE.**
- 4.) REPLACE FUEL TANK FUEL LINE AND OVER FLOW BREATHER LINE--PAGE 9-12 TRIUMPH MOTORCYCLE SERVICE MANUAL--REVERSE ORDER IN REMOVAL SECTION ABOVE.**
- 5.) REPLACE SEAT--PAGE 15-9 TRIUMPH MOTORCYCLE SERVICE MANUAL- REVERSE ORDER IN REMOVAL SECTION ABOVE.**
- 6.) REPLACE THE SIDE COVERS.**