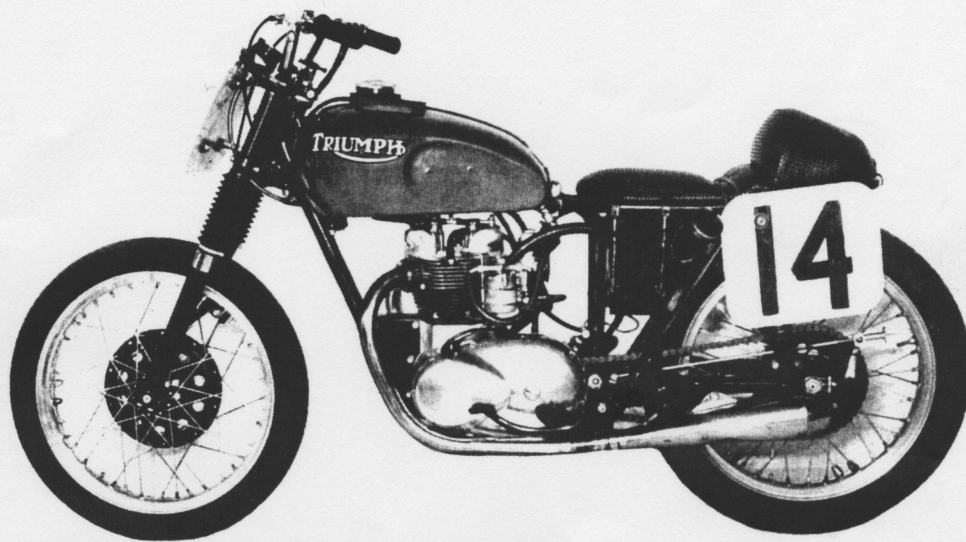
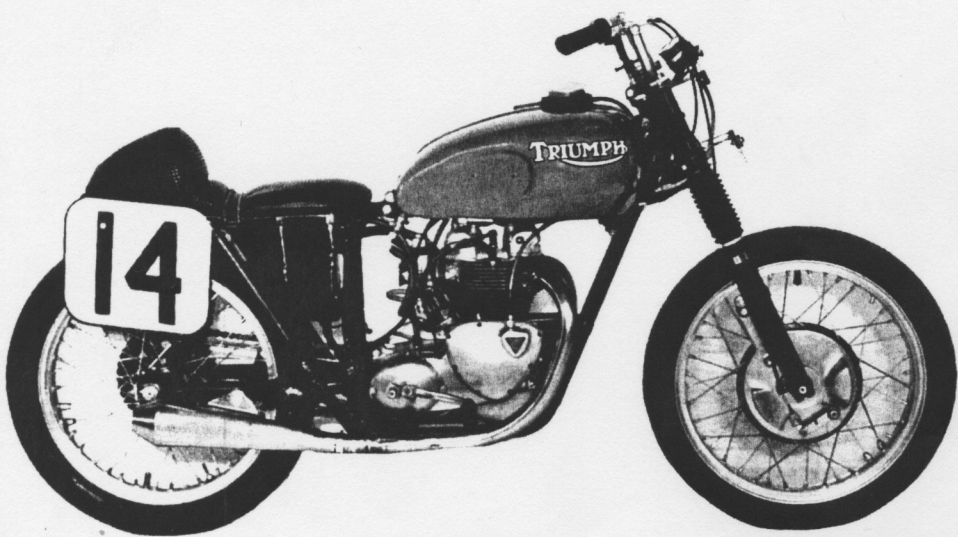


YOU CAN BUILD AND RIDE A WINNER!

During the past two years we have successfully developed a number of racing kit parts that can easily be fitted to a Triumph 500c.c. "C" Range Twin in order to convert a standard road bike into a potent road racing combination. Here are the pictures of Don Burnett's racer that successfully defeated all Expert competition at Daytona in 1962. This is the same machine, with the same specifications, that Don also used to win second place in the 1961 200 Mile Championship Event.



Triumph 500c.c. TR5/A or T100/S Class "C" Road Racer Ridden by Don Burnett, winner of the 1962 200 Mile National Championship Daytona Beach Road Race.

Total Dry Weight 293 lbs.

A successful formula for converting 1961 TR5/A or 1962 T100/S models to high performance Class "C" Road Racers

1. Remove road equipment such as lights, fenders, mufflers and twinseat.
2. Remove complete engine-gearbox unit and have your dealer carefully fit the racing kit parts shown on page 16 of your 1962 Tri-Cor accessory catalog or ship the complete engine-gearbox to The Triumph Corporation for a rebuilt T100S/RR Road Racing engine at an estimated exchange price of \$380.00.
3. TWIN CARBURETORS. Based on two years of successful road racing experience in both Amateur and Expert class, there are only two types of carburetors that we now recommend for road racing. These are the 1-1/16" Monoblocs as fitted to the T100S/RR road racing engine or the 1-1/8" Type 29 carburetors used by Don Burnett. Always use the single remote float bowl, 504/1, or the earlier type, 302/11.
4. RACING KIT PARTS. All of the parts shown on page 16 of the 1962 Tri-Cor catalog were fitted to Don Burnett's successful Daytona Road Racer. We do not recommend the use of any other racing parts except as mentioned under carburetors and alternative ignition. It is extremely important to note that all valve gear parts which include factory racing cams and tappets, racing exhaust valves and special oversize inlet valves, modified rocker arms, bronze valve guides and special single valve springs are all carefully designed and made to be used together as a combination to give maximum torque and power up to 8,600 rpm. There is nothing to be gained by running a Road Racing Engine at

- higher rpm and we must emphasize the great difference between the design and performance of a road racing engine as compared to an engine used for dirt track events. Although extremely high rpm is often necessary for flat track where a single gear ratio must be used and there is considerable slippage at the rear wheel, this is definitely not true of road racing where best possible acceleration and maximum torque are required at all times. Our Triumph engine actually loses power at engine speeds above 8,500 rpm and, of course, reliability is bound to suffer at sustained speeds in excess of that figure.
5. OPTIONAL SPECIFICATIONS. We suggest using alternative E.T. or battery ignition. If Lucas contact breaker or complete distributor is used with E.T. ignition, ALWAYS remove auto advance parts. Lucas contact breaker with locked spark can be used with a double secondary coil and battery or A.C. source. For Road Racing in Novice or Amateur Class, standard steel rims and either Dunlop or Pirelli standard tires (depending on the type of course) and the standard 3-1/2 gallon gas tank, F4232, and standard oil tank, F4851, (depending on the length of the race) can be used.

If you have prepared your Triumph Road Racer according to our recommendations, you will not be bothered by valve float or valve gear failure providing you never rev your engine above 8,600 rpm. This is the most important point to remember when gearing and riding a TRIUMPH Road Racer.

Specifications of 1961 and 1962 Daytona Road Racer

Forks: Standard assembly, RB2 rubber covers, 150c.c. SAE50 oil in each fork leg.

Front Wheel: W1249 with 8" air scoop brake spoked to 131Z100 19" alloy rim.

Rear Wheel: Standard assembly spoked to 131Z100 19" alloy rim.

Tires: Front: 3.00 x 19 Dunlop Racing Ribbed tire. 30 P.S.I. cold
Rear: 3.50 x 19 Racing Rear—same pressure

Brakes: Standard full floating brake shoes with special racing lining, RM2 on leading shoes and MZ41 on trailing shoes.

Frame: Standard assembly with F4862 frame strut fitted.

Rear Suspension: Standard shock units with adjustment in middle position. Use 100 pound "green-green" spring, part #9054/280.

Gas Tank: Five gallon F4115 gas tank (1959 Thunderbird type).

Oil Tank: Special homemade four quart oil tank mounted under frame and held with four tension springs. Castrol SAE30 regular oil used in engine.

Saddle: Homemade low profile saddle with backrest.

Fenders: None fitted.

Footrests: Standard footrests modified to fold at 45°. You will note that Don's bike has extra footrests fitted to megaphone hanger plates. These were used at Watkins Glen. Don used the standard front mounted footrests at Daytona.

Gearbox: Close ratio gears as shown in accessory catalog with T1445R modified K/S spindle with needle bearing. Heavy pressure T373TC camplate plunger spring. 5/16" rubber hose breather from gearbox filler plug. Castrol Racing R40 oil used in gearbox.

Primary Drive: Chain tensioner removed. D358RE endless type primary chain (no connector link). Primary drive and clutch parts lubricated by engine breather. "Garter Spring" removed from E3876 oil seal at engine sprocket.

Clutch: T414AT clutch plates, T1560 springs and T427S steel adjusting nuts. Ten 9/16" holes drilled radially in clutch housing to ventilate clutch plates.

Rear Chain: Renold D310RE rear chain with 10065/7 rivet link replacing connector link.

Exhaust System: Standard T100S/R exhaust pipes, E3993 and E3994, fitted with E3479 racing reverse cone megaphones and outlets of megaphone positioned at the end of swinging arm fork. Exhaust pipes shortened approx. 1-1/2" and bent slightly at point of megaphone attachment so that megaphone mounting bolt lines up with standard pillion footrest support.

Controls:

Handlebar: H821 with 1" removed from each end. 3/16" dual twistgrip.

Brake and Clutch Levers: Light alloy adjustable racing type. Brake lever #509/3 and clutch lever #509/4 for 1" diameter bars.

Tachometer: Magnetic RN1101 type. SK84103 flexible mounting bracket. (Tachometer Kit, CP182).

Engine Breathing System: Rotary breather valve, E2254, and spring, E2256, removed. (These parts may be left in place if desired). Breather pipe, E2724, plugged and two 1/4" holes drilled in crankcase boss above breather pipe to allow air from crankcase to pass from inlet camshaft into primary case through these two holes located just behind the top run of primary chain. Sleeve nut for alternator wires, E4143, removed and hole plugged. Remove chain tensioner abutment. E4147, and tap the hole with 1/8" taper pipe tap. Fit a brass pipe plug drilled through on center with 3/16" drill. Solder a piece of copper screen over the hole in plug. The air and oil mist from crankcase lubricates primary chain and any excess oil in primary case runs back through the screen and hole drilled in brass pipe plug fitted in place of chain tensioner abutment just below the engine sprocket. The only outlet from the primary case to atmosphere is a rubber hose with 5/8" inside diameter fitted at primary case filler plug. Hose extends upward with outlet positioned near seatpost tube. This engine breather system is an absolute must for road racing to prevent oil from blowing onto the rear tire.

Lubrication for Rear Chain: Rear chain oiler tube, E3884, fitted to the rear of the inner primary case is removed and the hole plugged. For road racing the rear chain can be carefully lubricated by cleaning it and soaking it in Wonderlube just before the race.

Engine Specifications: Cam Timing with Factory Racing Cams and Racing Tappets, E4040

E4038 Inlet Opens 35° Closes 57° at .020" lift
E4039 Exhaust Opens 57° Closes 36° at .020" lift

Ignition: CD278 Tri-Cor flywheel mag and CD248 distributor assembly. Locked spark with ignition timing at 40° B.T.C. Point gap .016". Bendix condenser 10-79168Y fitted at distributor. Spare condenser mounted on frame as emergency measure.

Carburetion: Two 1-1/8" Type 29 carburetors, Part #289/G/TR, bolted to CD274 twin carburetor cylinder head using CD34 insulating block between carburetor and cylinder head. Main jets #210. #4 slides. Needle position #2. Both carburetors fed from remote float bowl, 504/1. CD158 gas line used between float bowl and carburetors. F2688 connector banjo between carburetors. CD31 flexible gas line used from two taps in gas tank to float bowl.

Pistons: CP187 plus .040" oversize. Clearance at bottom of skirt .0035".
Cylinder Head: CD274 racing cylinder head conversion with special valve seat inserts for E4483KE oversize inlet valves. 1/2" thick insulator block, CD34, fitted between each Type 29 carburetor and head. Insulator blocks and ports enlarged to match carburetors.

Valves: E4013KE exhaust and E4483KE inlet.

Valve Guides: E4482 bronze exhaust and E4481 bronze inlet.

Valve Springs: CD252 single springs. Bevel outside edge of bottom coil to fit inside standard E3740 bottom cups. Use standard E3742 top collars and WE259A taper locks. Correct assembled length of spring with valve on seat is 1-3/16".

Lubrication: Castrol XL regular mineral oil SAE30 viscosity. Approx. three pints of oil added at pit stop and 1-1/4 qt. used in last half of race.

Oil Pump: CD259 oil pump body and plunger used to prevent wet sumping that might develop due to continuous operation of engine at high rpm.

Oil Lines: For best reliability we always shorten the standard copper oil lines by cutting them off about 2" from the junction block at crankcase. Use CD31 flexible tubing between the junction block and the oil tank. Modify rocker oil feed pipe, E3805, by cutting the tubing off 3" from the "T" and replace with CD33 flexible tubing. Cut the rigid tubing between each banjo fitting and the "T" fitting and insert a short length of CD33 tubing to avoid fatigue due to vibration.

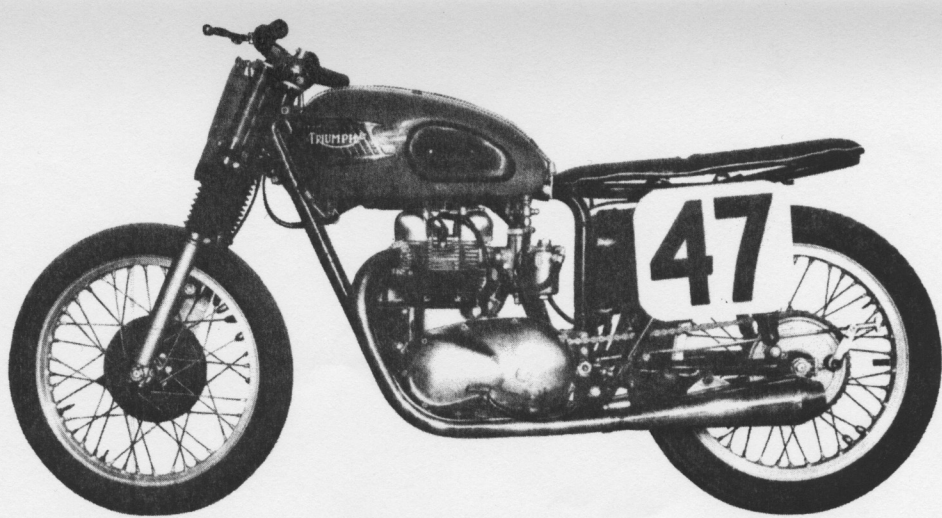
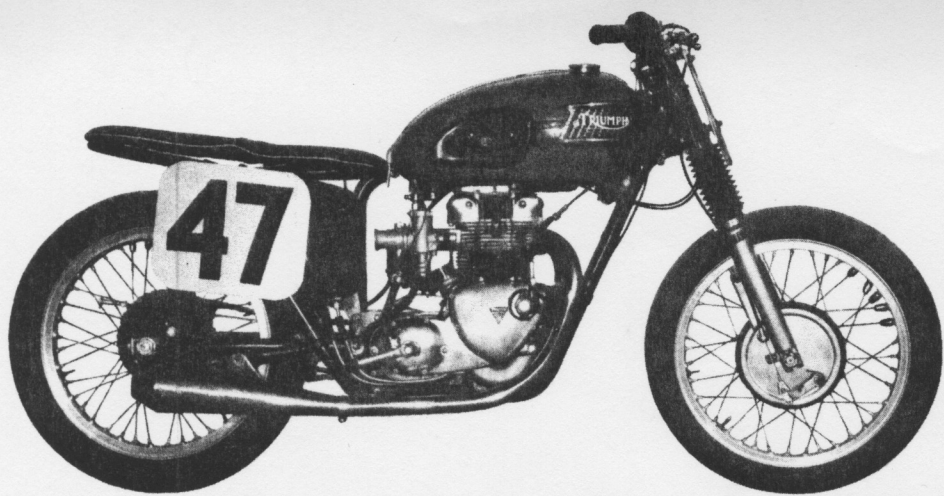
Spark Plugs: RL49 with D105T Sparky terminals.

Gasoline: "Pure Oil" high test 100 octane. Consumption at Daytona 24.5 mi. per gal.

Gear Ratio: 5.33 to 1 (original ratio for TR5A/R and T100S/R models). Use T1476 18T gearbox sprocket and W1276 43T rear wheel sprocket. This was just right for the Daytona two mile course and gave a theoretical top speed of 125 mph at 8,600 max. rpm. With a 3.50 x 19 Road Racing Rear tire or a 4.00 x 18 Pirelli and using close ratio gears, we suggest the following gear ratios for Road Races as shown.

| | | | |
|------------|-----------------------|-----------------------|---------------------|
| April 15th | Bossier City, La. | 130 Mile | 6.02 or 5.91 (app.) |
| June 17th | Laconia, N.H. | 100 Mile | 6.46 |
| Aug. 12 | Watkins Glen, N.Y. | 150 Mile | 5.16 |
| Sept. 23rd | Indianapolis, Ind. | 120 Mile | 5.33 (app.) |
| April 29th | Marlboro, Md. | (short .8 mi. course) | 6.94 |
| Sept. 2nd | Marlboro, Md. | 75 Mile | 6.34 or 6.46 |
| | Tobacco Trail Classic | | (long course) |

NOTE: If you are building a Triumph Road Racer and you are not sure how to modify engine breather or make a float bowl bracket, etc., ask us for a detailed instruction sheet on this subject.



The New 5T A Speed Twin Prepared for Class "C" Road Racing

Our 1959 "short stroke," unit construction Speed Twin model offers a new opportunity for a winning combination in Class "C" racing activity. Here are the pictures of Ralph Tysor's Daytona racer that set the fastest Amateur time trial at Daytona Beach, an impressive speed of 120.8 MPH which was faster than all but one of the Expert riders.

Several dealers are now preparing new Triumph 5T/A racers and the experience gained thus far proves beyond a doubt that the new "over-square" engine has great possibilities and is a potential winner.

Here are the specifications of Ralph Tysor's Daytona model.

Essential Modifications to Convert the Speed Twin to Racing Specification

1. Remove road equipment such as rear wheel enclosure, front fender, lights, etc.
2. Strip engine-gearbox unit, clean parts, and carefully re-assemble, replacing standard parts with racing parts as follows:
3. Fit 9 to 1 compression ratio pistons and heavy duty rings which will soon be available from stock.
4. Install racing cams, E4038 inlet and E4039 exhaust. (Available from stock).
5. Replace standard tappets with racing type, E4040. (Available from stock).
6. Modify cylinder head by enlarging inlet ports to 1" diameter and fit oversize valve seat inserts to take 1-9/16" diameter inlet valves which will soon be available from stock.

NOTE: We suggest that you send cylinder head to your distributor (The Triumph Corporation in the east or Johnson Motors, Inc. in the west) for rework if you do not have facilities for modifying cylinder head.

7. Fit racing kit type dual carburetor manifold (CD4) and a pair of 1" G.P.15 carburetors, (available from stock).
8. Fit top feed racing carburetor float bowl (302/13) to L.H. carburetor and modify bowl to feed both carburetors. A remote float bowl (302/11) could be used if preferred.

Optional Modifications and Specifications of Tysor's Daytona Racer

IGNITION: Flywheel magneto (Tri-Cor or Jomo type) replaces alternator, battery and distributor. This new magneto (soon available from stock) incorporates its own condenser. (Remove Lucas condenser from distributor body). The Lucas contact breaker and points are used without modification but the auto advance mechanism is eliminated and spark timing is set at 40° B.T.C.

WHEELS and TIRES: 18" alloy rims with 3.00x18 racing Rib front tire and 3.25x18 Directional tread racing rear tire were used. A 1953 T100 7" front brake and hub were fitted. Standard rear wheel brake was used but a special 41 tooth sprocket was necessary to obtain proper gearing for Daytona.

HANDLEBARS. The 1953 T100/C 1" handlebar (H820) was fitted with 313/4 Twin cable twistgrip and two D275T cables.

CLUTCH. Standard 5T/A four plate type except the standard T1362 plates were replaced with heavy duty plates, T414AT and standard springs were replaced with T741 heavy racing type.

GEARBOX. No modification required to gearbox except the fitting of a set of close ratio gears which will soon be available from stock. These close ratio gears are only recommended for Daytona or Laconia road races and give the following internal ratios as compared to the standard ratios:

| Close Ratio Gears | | Standard Gears | |
|-------------------|-----------|----------------|-----------|
| 1st | 1.86 to 1 | 1st | 2.41 to 1 |
| 2nd | 1.35 to 1 | 2nd | 1.74 to 1 |
| 3rd | 1.11 to 1 | 3rd | 1.17 to 1 |
| 4th | 1.00 to 1 | 4th | 1.00 to 1 |

GEARING. 4.57 to 1 using 20 tooth countershaft sprocket and special 41 tooth rear wheel sprocket. (Std. R/W sprocket is 43T).

TANKS. Standard oil tank used with capacity increased to three quarts. 1959 6T gas tank fitted. Because the large (5 gal.) tank with bottom mounting pads was required for Daytona, a tubular reinforcing piece was bolted to the standard tank mounting holes on head lug and frame lug at top of seatpost to reinforce the front frame section. This special piece would not be required if the regular 5T/A tank or standard Cub tank is used. The A.M.A. rules do not allow any alteration to standard frame but a reinforcing tube can be bolted in place providing no cutting, welding or drilling is required.

EXHAUST SYSTEM. Best results were obtained by using standard 5T/A exhaust pipes (1 1/2" dia.) with 4" reverse cone megaphones E3479RH and E3479LH fitted.

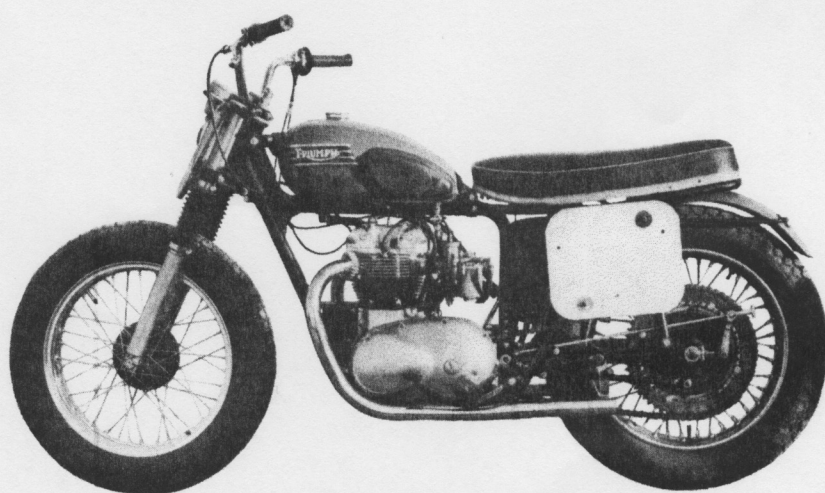
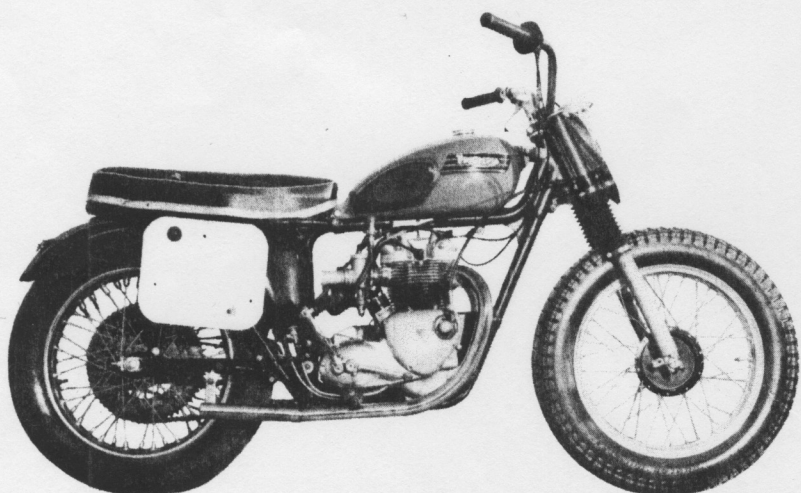
VALVE GEAR. The standard 5T/A valve springs E4010 and E4011 were used with standard collars and keepers. Rocker arms and push rods were standard parts, polished for increased strength and reliability.

CARBURETOR SETTINGS. G.P.15 1" carburetors, main jets 180 R.H. and 190 L.H., air jets .100", needles std. G.P., needle position #3, slides #4 cutaway.

SPARK PLUGS. RL49

OIL. Engine, primary and front forks—Castrol SAE30. Gearbox—Castrol "R" 20.

Total Dry Weight 290 Lbs.



The New 5T A Speed Twin Prepared for Class "C" Dirt Track Racing

The above pictures show how the 5T/A can be adapted to dirt track events.

Most of the modifications shown in the pictures and listed below are optional and depend largely on local conditions and rider preference. As a matter of interest, we list some of the standard Triumph parts that would be useful for converting a Speed Twin to a dirt track competition bike.

WHEELS and TIRES. For most dirt track events Firestone 4.00x18 ANS tires are preferred. These can be fitted front and rear by spoking a pair of 18" alloy rims (#132Z24) front and rear using std. 5T/A rear hub and 40 W1107 spokes. For the front wheel, use a T20/S front hub and spindle assembly and lace it to the 18" alloy rim using 20 W1293, 10 W1294 and 10 W1295 spokes. All these parts are readily available from stock.

TANKS. Standard oil tank can be used or as an option, if solo seat is fitted, a Tiger Cub oil tank can easily be mounted to the 5T/A frame. To meet A.M.A. requirements, a T20/C or T20/S gas tank can be fitted by adding two short extension brackets to the front mounting lugs of the Cub Tank. No modification to the frame or the tank is necessary other than the brackets that can be bolted in place.

NOTE: Always use the late type Cub gas tank with reinforcing plates inside the tank and fit two F3057 gas taps.

FORKS. No change to front forks except use heavy oil as required to suit track conditions.

FRAME. No change to frame except to replace rear suspension units with suitable struts. These struts for converting from spring frame to rigid frame can be shorter than the suspension units, according to rider preference in order to lower the center of gravity of the machine and change the front fork angle. A pair of adjustable struts might be worthwhile to suit individual circumstances.

HANDLEBARS and CONTROLS. The 1" handlebars shown in picture are H820 "high" handlebars. The dual cable twistgrip, 313/4, is recommended for all dirt track racing. An optional arrangement preferred by riders who favor "low" handlebars is to fit a pair of T20/S handlebars (H1226). This is a 7/8" diameter bar and a special sleeve is used if 313/4 twistgrip is fitted.

GEARING. Using a 17 tooth countershaft sprocket (T1558) the following gearing can be obtained with bolt-on sprockets, RS54 through RS60. In order to use these bolt-on sprockets, replace the std. 5T/A rear wheel drum and sprocket which has 43 teeth with the std. Big Twin type (W951) which has 46 teeth.

| 5T/A Gearing with 17 Tooth Countershaft Sprocket | | | |
|--|-------|---------------------|-------|
| Rear Wheel Sprocket | Ratio | Rear Wheel Sprocket | Ratio |
| 54 teeth | 7.09 | 58 teeth | 7.61 |
| 55 teeth | 7.22 | 59 teeth | 7.74 |
| 56 teeth | 7.35 | 60 teeth | 7.87 |
| 57 teeth | 7.48 | | |

EXHAUST SYSTEM. The pipes shown would be suitable for TT racing and are the standard 5T/A downswept pipes, 1 1/2" diameter with straight pipe extensions, (left hand E4042 and right hand E4043). These are available from stock. As an alternative for 1/2 mile racing, a special cross-over exhaust pipe can be made and a pair of E3479 megaphones (4") with reverse cones would be recommended.

ENGINE and GEARBOX. For modifications to engine and gearbox, see above description of Daytona racer. Most riders, however, prefer standard ratio gears for dirt track events as compared to close ratio type used for road racing.

In the West:
JOHNSON MOTORS, INC.
 267 W. Colorado St.,
 Pasadena 1, Calif.

In the East:
THE TRIUMPH CORPORATION
 Towson, Baltimore 4, Maryland