



***Supplemental Information & Instructions for
TC1 TOMPKINS STEERING KIT
MG TC***

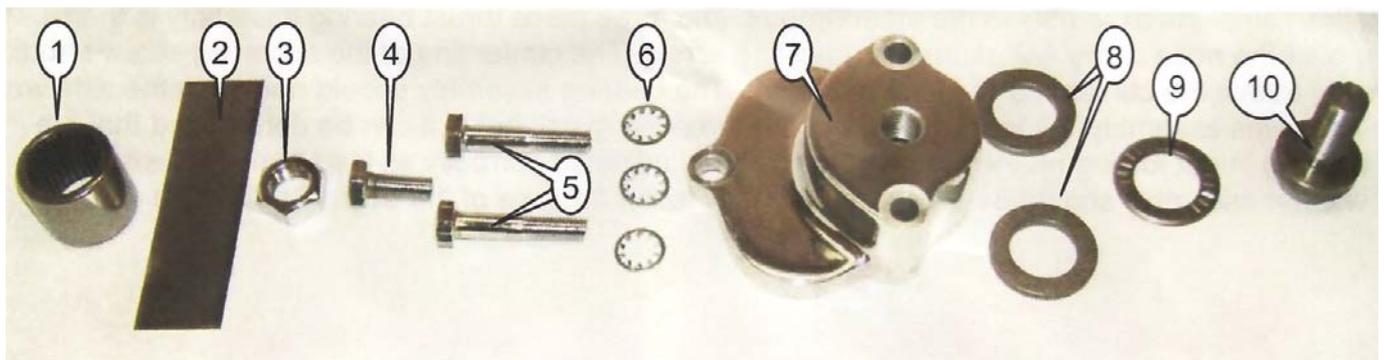
The Tompkins kit was originally developed in the late 1940s in an effort to reduce the major cause of friction in the TC steering box and at the same time provide for an easy and convenient means of adjustment. A Tompkins kit will not cure problems related to worn or defective parts in the front suspension, kingpins, wheel bearings, shock absorbers or tie rod ends. Proper alignment of the front and rear suspension attachment points and the condition of the rest of the suspension components are critical.

TCs did handle and steer extremely well when they left the factory many years ago. TCs today can be restored to their former glory but this does require that all aspects of chassis setup are truly correct.

The basic function of the Tompkins steering kit is to provide an adjustable bearing surface for the upper end of the steering box sector shaft. The original MG design was such that the 'lever' of the sector shaft slid, or more accurately, was dragged along the underneath of the top cover plate as the steering wheel was turned. As the cover plate, sector shaft and steering column worm gear wore, increasing amounts of play would develop at the wheel. This necessitated the removal of one or more adjusting shims from under the original top cover plate. The Tompkins kit eliminates this major source of friction and at the same time makes adjustments for wear quick and easy.

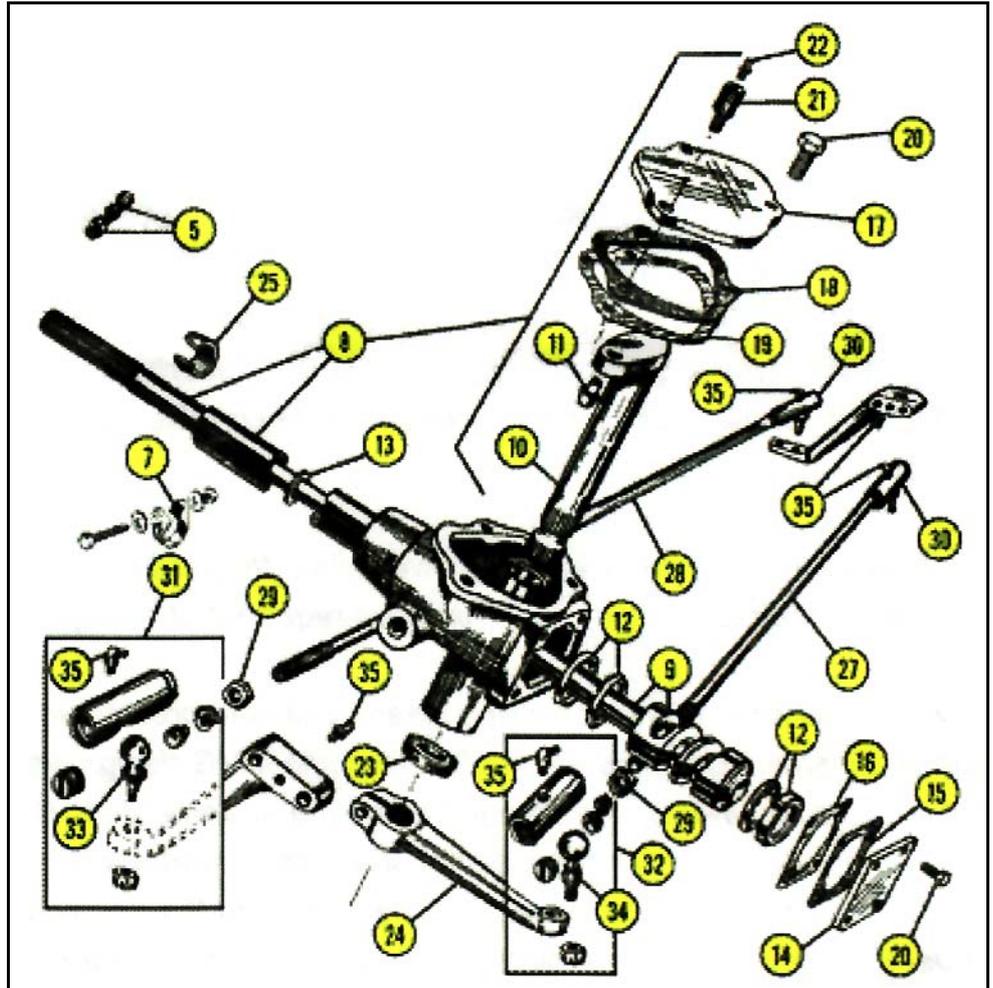
Contents of Kit

Illustration No	Description	Qty in Kit	Rec'd
1	Bearing	1	
2	Shim	1	
3	Nut, Chrome, 1/2x 20 TPI	1	
4	Setscrew, 5/16 BSF x 3/4	1	
5	Bolt, 5/16 BSF x 1 1/2	2	
6	Washer, locking, internal tooth, 5/16"	3	
7	Tompkins Casting	1	
8	Washer. Flat, bearing surface	2	
9	Needle Bearing, caged assembly	1	
10	Adjusting Screw	1	
	Instruction Sheet	1	



Before You Begin

Prior to installation of the Tompkins kit it is best to remove and dismantle the steering box. If the sector shaft (10) is scored and/or a sloppy fit in the steering box, it should be replaced (B&G # AAA98) or reconditioned by hard chrome plating and grinding back to a diameter suited to the ID of the box. (Note: Hard Chrome Plating is not the same as decorative chrome plating and must be done by a specialist-plating shop.) If, as is likely, the box itself is also worn where the sector shaft fits through it, it can be re-sized by the installation of two bronze bushes (B&G #100481) which should then be reamed to fit the new or hard-chromed sector shaft. Obviously, the installation and reaming of these bushes should be done by a competent machinist. This would also be an opportunity to have the box modified to accept a modern oil seal, 23 (B&G # 60390) around the sector shaft.



If you decide to re-use your sector shaft, carefully inspect the peg (11) for wear. If worn on 2 sides only, it can be pressed out and re-installed at 90 degrees to its original position; if wear is evident on 4 faces, then this has already been done and you'll have to replace the peg with a new one (B&G # AAA76). The steering column worm gear (9) should be examined to ensure that the bearing surfaces and sector shaft peg surfaces are not excessively pitted or worn.

Assembly

Assemble cam and column assembly (9) into steering box using the needle bearing supplied with the kit (and shim if required) in place of the original felt bush (25) at the top of column. Adjust the worm gear bearings by selectively fitting shims (16) under the end cover, to eliminate all play with no pre-load.

Inspect the upper end face of the sector shaft (10a). It must be a perfectly flat face for the Tompkins kit thrust bearing assembly. If the surface of the sector shaft is rough cast where the thrust bearing will ride it must be machine cut on a lathe. This must be done by a machinist. It is only necessary to machine an area large enough to accept the diameter of the thrust washer plus approximately 1/16" for extra clearance.

Test fit the Tompkins assembly to the steering box. The three piece thrust bearing assembly is then slipped over the nose of the 1/2" diameter adjusting screw. The centre line of the adjusting screw should be directly above the centre line of the sector shaft. The bearing assembly should not touch the sidewall of the Tompkins assembly. By looking through the three fixing bolt holes it can be determined that the thrust bearing is not fouling on the side surfaces. When adjusted correctly all load from the face of the thrust washer assembly should be transferred directly to the flat face of the sector shaft (10a).

Fill the steering box with 140 weight gear oil. Back off the adjusting screw completely; it should not cause any binding of the internal components. Bolt the Tompkins assembly into position using only one gasket or shim.

Final Adjustment is made by obtaining a slight drag of the sector shaft against the worm gear, when in the exact centre position. The adjusting screw is secured in position by the chrome-plated locknut.

Replace the steering gear in the chassis. Place the steering wheel in position, making certain that when the steering wheel is in exactly a straight ahead position the sector shaft is still exactly in the centre of the high spot.

At this time make certain that king pins are neither loose nor binding. Be certain that the front axle beam is not installed backwards! (The king pins should tilt three degrees toward the rear as measured relative to the flat axle mounting surfaces at the top.)

Dismantle all four tie rod and drag link ends and examine all parts carefully for any signs of wear especially at the tie rod and balls. Reassemble all components using ample grease. Be certain that wheel bearings and hubs are in good order and virtually free of up and down free play.

With the steering gear still centred bolt the pitman arm securely to the steering box sector shaft and finally adjust the drag link with the car fully laden to insure that the steering wheel and sector shaft high point are still perfectly centred when the car is in the straight ahead position.

Subsequent adjustment of the Tompkins kit is very simple. Jack up the front end, loosen the lock nut and tighten up the adjusting screw to provide a very slight drag when the wheels are in the dead ahead position.

With the front and rear suspension in good working order and a properly maintained and adjusted steering mechanism with the Tompkins kit fitted, your TC should handle in a completely predictable and pleasant 'vintage' manner.