

## Supplemental Information & Instructions for 260-118 Tompkins Steering Kit MG TC

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*The Tompkins kit was originally developed in the late 1940's 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, king pins, or 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.*

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

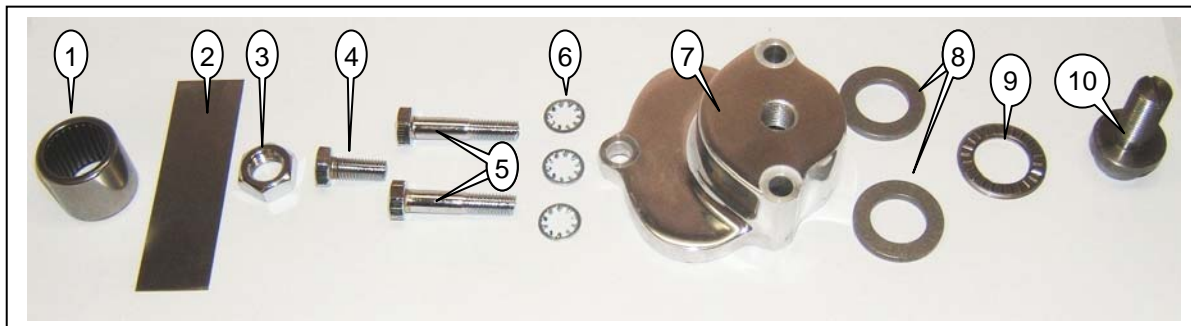
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*The basic function of the Tompkins steering kit is to provide an adjustable bearing surface for the upper end of the steering box sector shaft. The original MG design was such that the "lever" of the sector shaft slid or more accurately was dragged 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.*

### 20 **Contents of Kit**

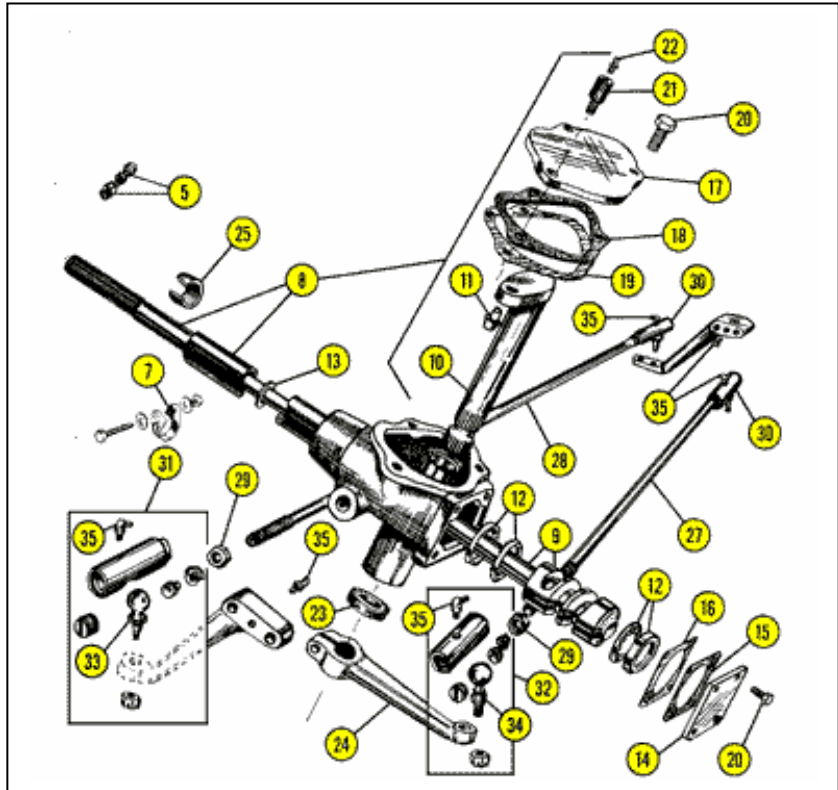
Illust#	Item	Description	Qty in Kit	Rec'd
1	129-214	BEARING	1	
2	129-224	SHIM	1	
3	310-432	NUT, CHROME, 1/2" x 20 TPI	1	
4	320-362	SETSCREW, 5/16 BSF X 3/4	1	
5	320-392	BOLT, 5/16 BSF X 1 1/2	2	
6	324-130	WASHER, LOCKING, INTERNAL TOOTH, 5/16"	3	
7	390-007	TOMPKINS CASTING	1	
8	390-017	WASHER. Flat, bearing surface	2	
9	390-027	NEEDLE BEARING, caged assembly	1	
10	390-037	ADJUSTING SCREW	1	
	980-090	INSTRUCTION SHEET	1	

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## 32 **Before You Begin**

33 Prior to installation of the Tompkins  
34 kit, it is best to remove and dismantle  
35 the steering box. If the sector shaft  
36 (10) is scored and/or a sloppy fit in  
37 the steering box, it should be  
38 replaced (Moss # 260-070) or  
39 reconditioned by hard chrome plating  
40 and grinding back to a diameter  
41 suited to the ID of the box. (Note:  
42 Hard Chrome Plating is not the same  
43 as decorative chrome plating and  
44 must be done by a specialist plating  
45 shop.) If, as is likely, the box itself  
46 is also worn where the sector shaft  
47 fits through it, it can be re-sized by the  
48 installation of two bronze bushes,  
49 Moss # 330-130, which should then  
50 be reamed to fit the new or hard-  
51 chromed sector shaft. Obviously, the  
52 installation and reaming of these  
53 bushes should be done by a  
54 competent machinist. This would also  
55 be an opportunity to have the box  
56 modified to accept a modern oil seal  
57 (23, Moss # 120-020) around the  
58 sector shaft.



59 If you decide to re-use your sector shaft, carefully inspect the peg (11) for wear. If worn on 2 sides only, it  
60 can be pressed out and re-installed at 90-degrees to its original position; if wear is evident on 4 faces,  
61 then this has already been done and you'll have to replace the peg with a new one (Moss # 260-080). The  
62 steering column worm gear (9) should be examined to ensure that the bearing surfaces and sector shaft  
63 peg surfaces are not excessively pitted or worn. New cams and columns are occasionally available under  
64 Moss # 453-110.

65

## 66 **Assembly**

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

70

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

76

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

83

84 Fill the steering box with 140 weight gear oil (Moss # 225-310, 1 qt). Back off the adjusting screw  
85 completely; it should not cause any binding of the internal components. Bolt the Tompkins assembly into  
86 position using only one gasket or shim.  
87

88 Final Adjustment is made by obtaining a slight drag of the sector shaft against the worm gear, when in the  
89 exact center position. The adjusting screw is secured in position by the chrome plated locknut.  
90

91 Replace the steering gear in the chassis. Place the steering wheel in position, making certain that when  
92 the steering wheel is in exactly a straight ahead position the sector shaft is still exactly in the center of the  
93 high spot.  
94

95 At this time make certain that king pins are neither loose nor binding. Be certain that the front axle beam  
96 is not installed backwards! (The king pins should tilt three degrees toward the rear as measured relative  
97 to the flat axle mounting surfaces at the top).  
98

99 Dismantle all four tie rod and drag link ends and examine all parts carefully for any signs of wear  
100 especially at the tie rod and balls. Reassemble all components using ample grease. Be certain that wheel  
101 bearings and hubs are in good order and virtually free of up and down free play.  
102

103 With the steering gear still centered, bolt the pitman arm securely to the steering box sector shaft and  
104 finally adjust the drag link with the car fully laden to insure that the steering wheel and sector shaft high  
105 point are still perfectly centered when the car is in the straight ahead position.  
106

107 Subsequent adjustment of the Tompkins kit is very simple.

108 Jack up the front end, loosen the lock nut and tighten up the adjusting screw to provide a very slight drag  
109 when the wheels are in the dead ahead position.  
110

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