

MWL Spider and OE Cooler Watts Link Center Section

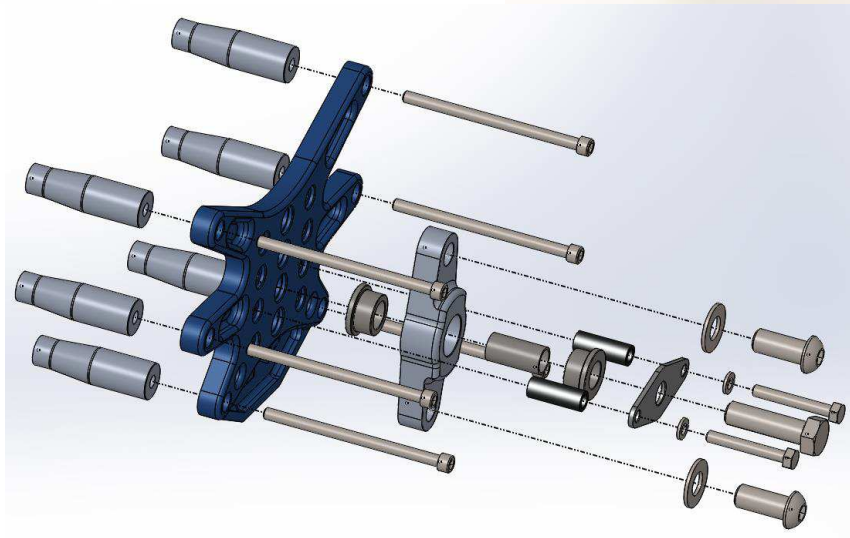
Preparing the Watts Link Center Section

- 1) Apply supplied white lubricate to all internal and external contact surfaces of the two Delrin Bell crank Bushings and install bushings in Bel Crank.
- 2) Insert Bell crank center sleeve into Bell Crank bushings so that the end is flush with the surface of the bushing on the out board end. The protruding end of sleeve on the back side of the Bell crank will locate the Bell crank on the Plate.
- 3) Install in place on Spider Plate. We recommend initially using second hole from top.
- 4) Place Stabilizer plate in place on Bell Crank.
- 5) Apply anti-seize sparingly to threads of the two 5/16" stabilizer bolts and the single 5/8" pivot bolt. Install with lock washers through stabilizer plate. Screw in bolts but wait until entire assembly is installed on housing before tightening.
- 6) Wait until assembly is installed on rear-end housing before tightening fasteners to Torque Specs on chart below.

MWL 5400 Spider



MWL 5300 OE Cooler Version



Preparing the Housing and Cover

- 1) Remove differential cover, drain lubricant from rear end,
- 2) **Thoroughly** clean surfaces of cover and gear housing of and gasket of sealer material.
- 3) Use a 5/16-18 tap or thread chaser to clean out the bolt holes and check that the bolts will screw in deep enough to tighten properly. All six attachment bolts must be free of bottoming in holes later during final assembly.
- 4) If you are installing on to an OE Finned Aluminum Cover from Ford, you will have to prepare the cover in a drill press or milling machine. Use a 7/8" counter-bore or end mill to spot face around the 6 bolt holes to assure flat and level surfaces of contact for the Watts link stands to set against. Set travel stop on drill press to assure even depth of cut between holes. Machine minimal material from cover, just enough to clean full surface around each of the 6 holes and allow at least 1/2" of Watts Plate mounting bolt thread engagement in housing. If you are using a drill press, an inexpensive Counter bores with 1/4" shank along with pilot is available from Griggs Racing:

7/8 Counter Bore: Part # T-MCM3102A33

5/16" Pilot for the above: Part # T-MCM3103A29

Installation

- 1) Apply RTV sealant in a very **thin 1/16" wide bead** around inner circumference of cover mating surface where it will contact the housing. **BE CAREFUL NOT TO APPLY SEALER WITHIN 1/2" OF BOLT HOLES.** Install cover on housing with the 4 OE or supplied shorter Allen bolts that do not retain the Watts link plate. **DO NOT INSTALL A GASKET!!**

Warning: Cover should mate metal to metal with housing in the areas around the bolt holes that the Watts link plate attaches to assure secure attachment of the Watts Plate. Sealer should have been applied inboard of the holes far enough to still seal cover to rear axle but not be under the cover surface corresponding to the Watts link stands. Excess sealer or any gasket material left around these 6 holes securing the Watts link can prevent metal to metal contact thereby allowing the Watts link plate retaining bolts to loosen in use.

- 2) To prevent corrosion, apply sparingly the supplied anti-seize to the threads and shanks of the watts plate attaching bolts. Insert through plate install Stands onto bolts being sure the larger diameter end of the stands are against the plate, small ends will mate against the cover.
- 3) Install plate on housing. Tighten all bolts to specification in chart. After a few minutes, Re-torque each bolt.
- 4) It is good practice on an assembly that is stressed on track to re-torque again after a few hours. Though we have never experienced loosening or leaking of fluid when properly installed, we believe it is good practice to periodically re-torque the 6 Watts Plate bolts, particularly after the first session of hard use on track.

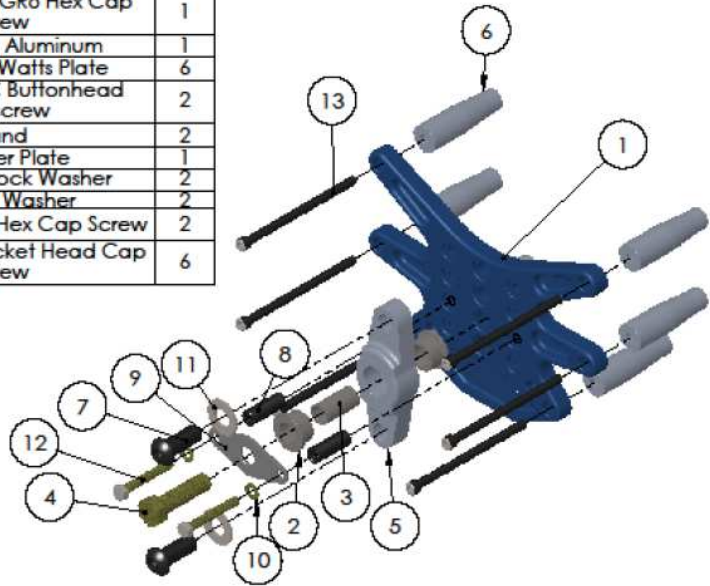
Torque Specs:

Component	Fastener	QTY	Specification	Lubricant
Diff Cover:	5/16" socket head cap screws	10	22 ft lbs Anti-Sieze	Anti-Sieze
Plate:	1/2" course nuts on girdle bolts	2	MAX of 5 ft- lbs or 60 INCH-lbs	Dry
	1/2" G8 fine bottom of plate to TorqueArm	1	85-95 ft-lbs	Anti-Sieze
Bell Crank:	5/8" G8 center pivot bolt	1	65-70 ft-lbs	Anti-Sieze
	5/16 G8 course bolts	2	18-22 ft-lbs	Anti-Sieze
Arms:	5/8" Buton Head Socket Head Bolt Course Thread through heim ends into bell crank	2	70-75 ft lbs	Anti-Sieze
Chassis Mount:	1/2" G8 fine	2	95-100 ft lbs	Dry
	14mm OE Chassis Pillar passenger side upper	1	100-110 ft lbs	Dry
	3/8" G8 fine	1	38-42 ft lbs	Dry

Usage/Tuning Notes:

- 1) Watts Linkage Arms (rods) do not have to be level to function properly
- 2) Raising Watts bell crank increases over steer (raises roll center)
- 3) Lowering Watts bell crank reduces over steer (lowers roll center)
- 4) Check periodically for tightness of bolts and condition of bell crank bushing and rod ends. If play develops in any of these pivot points, subsequent impact loadings may cause rattles, as well as increase probability of failure over time. The supplied rod ends are made to Griggs Racing specifications. The balls should be tight in their housings. Our experience is the supplied rod ends can run an entire year of 20 to 40 race events or more without needing to be replaced. In such racing applications we replace them yearly for good measure, and check them every event. Field experience street driving also indicates rod end life span to be 30K to over 100K miles, depending on conditions. However periodic checking is still recommended as it is good practice on any car.
- 5) When servicing rear axle assembly in the future, be sure to re-install cover using VERY LITTLE SEALANT.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MWL 8002	Main Plate, Spider 8.8	1
2	MWL 1023-D	Bush, Delrin	2
3	MWL 1022	Sleeve	1
4	62F225HCS8X	5/8X2.25" NC GR8 Hex Cap Screw	1
5	MWL 1025 A	Bell Crank, Aluminum	1
6	MWL_8011_Standoff	Spacer for Watts Plate	6
7	62C150SCS8X	5/8 X 1.5" NC Buttonhead Capscrew	2
8	MWL 1021	Stand	2
9	MWL 1020	Stabilizer Plate	1
10	Regular LW 0.3125	5/16" Split Lock Washer	2
11	Preferred Narrow FW 0.625	5/8" AN Washer	2
12	HBOLT 0.3125-18x2.25x0.875-N	5/16X2.25" NC Hex Cap Screw	2
13	HX-SHCS 0.3125-18x5x1.375-N	5/16X5" NC Socket Head Cap Screw	6



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UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES		BG	7/29/13
TOLERANCES:		CHECKED	
FRACTIONAL ±		ENG APPR.	
ANGULAR: MACH ±	BEND ±	MFG APPR.	
TWO PLACE DECIMAL ±.020		Q.A.	
THREE PLACE DECIMAL ±.002		COMMENTS:	
INTERPRET GEOMETRIC TOLERANCING PER:			
MATERIAL:			
FRESH			
DO NOT SCALE DRAWING			

griggs racing		310 W MacArthurs St. Sonoma, CA 95476	
TITLE: Watts Link Center Section Spider Type Flts Ford 8.8			
SIZE	DWG. NO.	REV	
A	MWL 5400 Exploded BOL		
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1	

5 4 3 2 1

