

# INSTALLATION - SERVICE INSTRUCTIONS



HIGH EFFICIENCY  
COMPLETE  
THIRDMEMBER

August 12, 1998

NO. 0060 PAGE 1 OF 3

765 South Pierce Avenue, Louisville, CO 80027 (303) 665-6901 / (800)-525-1963

## PART NUMBERS :

**67410.....9"** FORD ALUMINUM HIGH EFFICIENCY COMPLETE THIRDMEMBER

## PRIMARY APPLICATIONS :

*DRAG RACING*

## INSTALLATION OVERVIEW :

- 1) MODIFY THE AXLE HOUSING TO ACCOMMODATE THE HIGH EFFICIENCY RING GEAR (SEE FIGURES 1-3).
- 2) THOROUGHLY CLEAN THE AXLE HOUSING, INCLUDING THE TUBES, WITH A SOLVENT TO REMOVE ANY RESIDUE THAT MIGHT LEAD TO AN ABRASIVE FAILURE.
- 3) DETERMINE AND RECORD THE PINION BACKLASH OF THE THIRDMEMBER PRIOR TO PLACEMENT IN THE HOUSING. THIS CAN BE ACCOMPLISHED BY MOUNTING A DIAL INDICATOR IN A LINE THAT IS TANGENT TO THE ROTATION OF THE RING GEAR.
- 4) INSTALL THE THIRDMEMBER IN THE AXLE HOUSING USING A GASKET OF THE SAME THICKNESS AS THE GASKET USED TO NARROW THE HOUSING. THE MW STANDARD THICKNESS IS 0.030". THIS WILL PREVENT THE AXLES FROM BINDING. TORQUE THE TEN 3/8"-24 THIRDMEMBER ATTACHMENT NUTS TO 30-35 FT. LBS. INSTALL THE AXLES AND BRAKES, THEN RE-CHECK THE PINION BACKLASH, IT SHOULD REMAIN THE SAME AS IT WAS PRIOR TO INSTALLING THE THIRDMEMBER, IF THE BACKLASH HAS CHANGED, THERE ARE A COUPLE OF POSSIBLE CAUSES THAT SHOULD BE CONSIDERED.
  - A. THE CAPS AND RING GEAR MAY NOT HAVE ADEQUATE CLEARANCE IN THE HOUSING. USE MODELING CLAY IF NECESSARY TO DETERMINE WHERE THE HOUSING IS CONTACTING THE THIRDMEMBER ASSEMBLY (SEE FIGURES 1-3).
  - B. THE THIRDMEMBER MOUNTING SURFACE ON THE HOUSING MAY NOT BE FLAT. IF THE MOUNTING SURFACE IS NOT FLAT THE THIRDMEMBER CASE WILL DISTORT CAUSING A LOSS OF BACKLASH.
- 5) CHECK THE ANGLE OF THE PINION YOKE AND MAKE SURE THAT IT IS EQUAL TO THE ANGLE OF THE TRANSMISSION YOKE. THE PINION YOKE AND TRANSMISSION YOKE NEED TO RUN PARALLEL TO EACH IN ORDER TO PREVENT TORSIONAL EXCITATION OF THE DRIVESHAFT.
- 6) FILL THE REAR END ASSEMBLY WITH OIL. FOR DRAG RACING APPLICATIONS, M-W RECOMMENDS TORCO 85-140 MINERAL BASED OIL.

## BREAK IN PROCEDURE :

ALL NEW RING AND PINION GEARS SHOULD BE BROKEN IN. THE INITIAL BREAK IN PROCEDURE IS TO PERFORM A RUN-IN PRIOR TO DRIVING, WITH THE REAR WHEELS JACKED UP AND OPERATING AT IDLE SPEED IN HIGH GEAR FOR A MINIMUM OF 15 MINUTES, THEN LET COOL.

## OIL REQUIREMENTS :

M/W RECOMMENDS THAT THE GEAR LUBE COME UP TO THE CENTER OF THE PINION GEAR. THE MOVEMENT OF LUBE DURING A RACE SHOULD ALSO BE CAREFULLY CONSIDER TO INSURE ADEQUATE LUBRICATION. ADDITIONAL FLUID OR A FLUID PUMP SYSTEM MAY BE NECESSARY TO PROVIDE LUBRICATION TO THE PINION BEARINGS WHILE UNDER HARD ACCELERATION.

## RECOMMENDED MAINTENANCE :

BE SURE THAT THE GEARS ALWAYS HAVE ADEQUATE LUBRICATION. IN ADDITION, M/W ALSO RECOMMENDS A MAGNETIC DRAIN PLUG TO GATHER METAL FLAKES THAT ARE PRODUCED AS THE GEARS WEAR. M/W ALSO RECOMMENDS THAT THE OIL BE CHANGED AFTER THE BREAK IN PROCEDURE TO REMOVE ANY METAL PARTICLES THAT MAY HAVE COME OFF. FINALLY, VISUAL INSPECTIONS OF THE GEARS SHOULD BE MADE FREQUENTLY TO MAKE SURE THAT THE GEARS ARE FREE OF CRACKS AND DISCOLORATIONS. IF CRACKS OR DISCOLORATIONS ARE PRESENT THE GEARS SHOULD BE REPLACED.



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NO. 0060 PAGE 2 OF 3

765 South Pierce Avenue, Louisville, CO 80027 (303) 665-6901 / (800)-525-1963

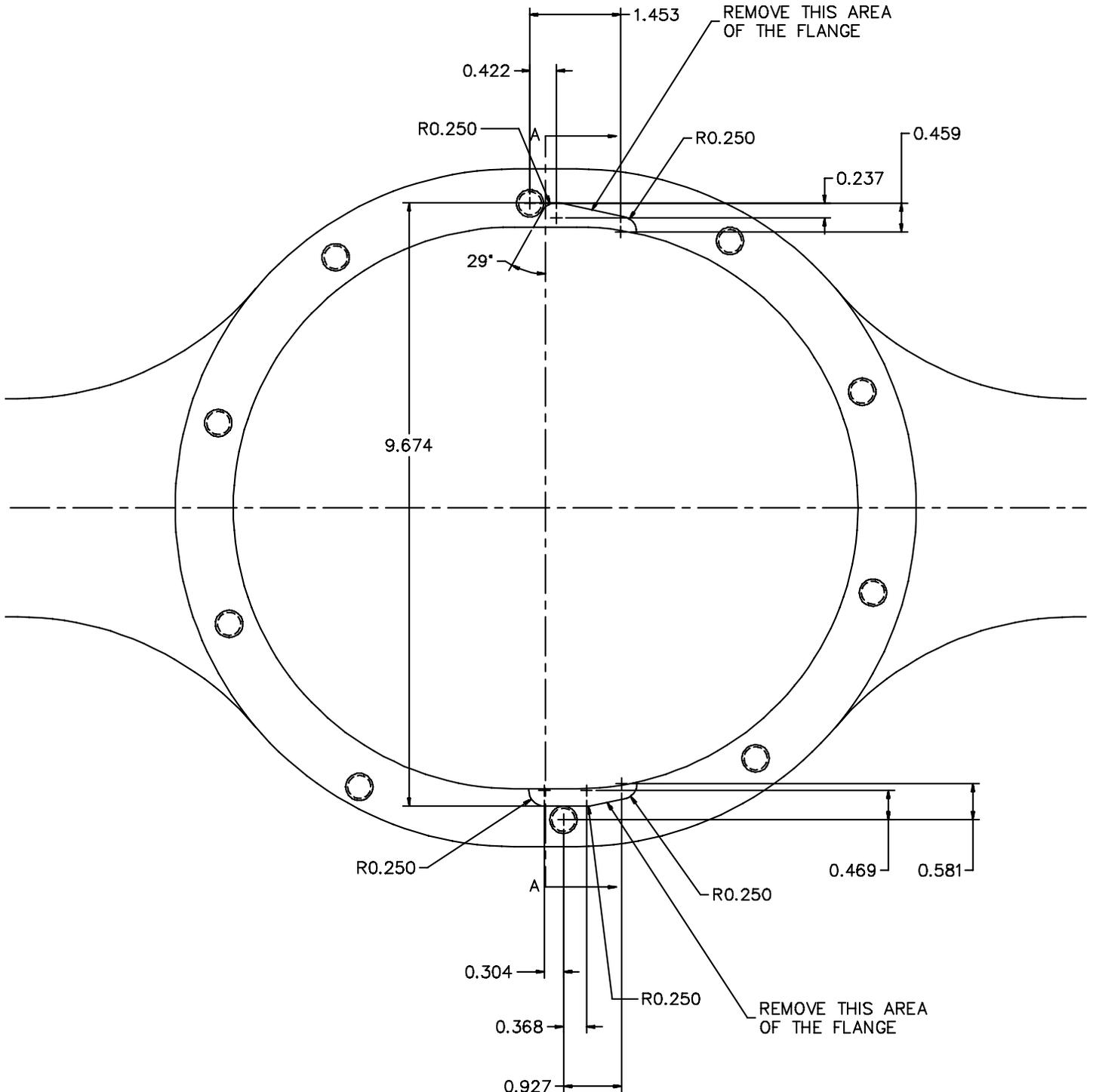


Figure 1. Front view of housing modifications

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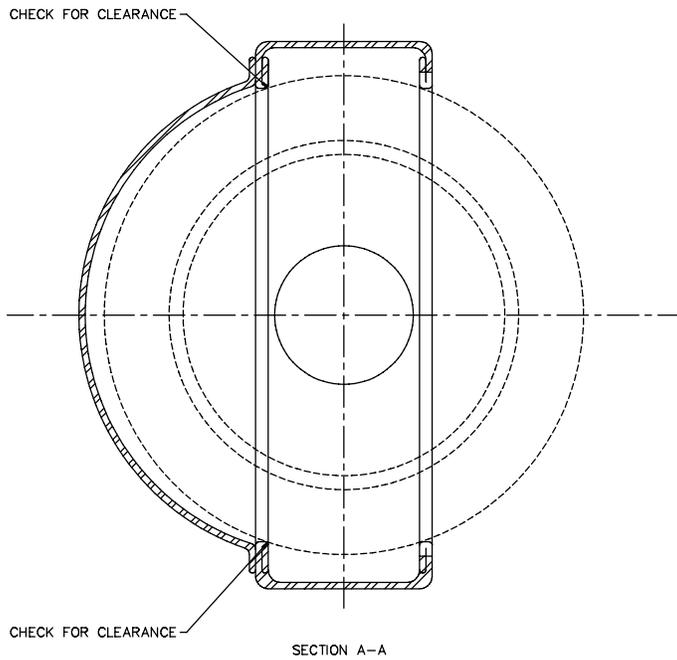


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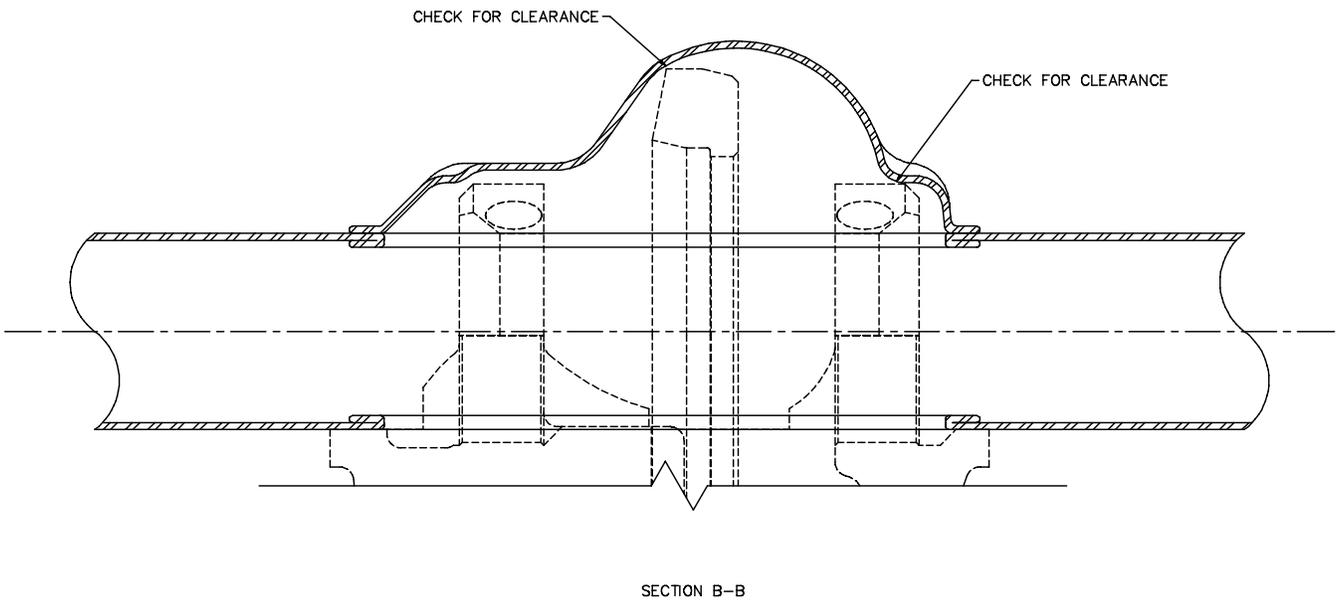
August 12, 1998

NO. 0060 PAGE 3 OF 3

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**Figure 2. Side view of housing modifications**



**Figure 3. Top view of housing modifications**