# INSTALLATION - SERVICE INSTRUCTIONS

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**MARK WILLIAMS Enterprises**

**PART NUMBERS:**                                    **DESCRIPTION**
 57681..................................................Ball/Ball 9" pinion support for 28 spline gear (7/16" pinion studs).
 *This unit uses Dual angular contact bearings that has the lowest frictional drag of any pinion support assemblieavailable.*
 *The angular ball allows amuch higher rpm  than the standard Timken (tm) units while reducing heat build up caused by*
 *friction. Extra care must be taken when overhauling this unit as the preload settings of the bearings is critical.*

**PARTS INCLUDED:**
 1 - 57661.................................................Housing Aluminum rear section .
 1 - 57661.................................................Housing Aluminum, front retainer section
 1 - -248...................................................O" ring, Pinion housing ".
 1 - 57904.................................................Seal, Pinion 28 spline.
 1 - 7307.................................................. Bearing Front, angular contact.
 1 - 7309BM...............................................Bearing Rear, angular contact
 1 - 57674.................................................Shim, hardened rear bearing .
 1 - 57673.................................................Solid preload spacer. This spacer is
                factory machined to set the bearing pre-load.
 1 - 57653.................................................Reducer, bushing front bearing

**PRIMARY APPLICATIONS:**
 *Drag racing.  Can be used with any 28 spline Pro gears or Standard gears with 28 spline pinion.*

**INSTALLATION OVERVIEW:**
 **1) The diameter of the pinion shaft is very important!**  *MW pinion supports are pre-assembled and bearing preload determined based on a pinion shaft diameter of 1.8765" .  If the shaft is too large it will affect the preload on the bearings.  The rear bearing in a Mark Williams support are manufactured with a bore size of 1.8760, this allows for a light press or slip fit the pinion with luberize coating.*
 **2)** *The hardened bearing shim (57682) is the first item to go on the pinion.  The large radius on the I.D. of the shim should face the gear of the pinion.*
 **3)** *Support assemblies are supplied with rear pinion bearing installed in the housing so it is necessary to install these two pieces on the pinion as one unit.  When pressing the bearing and housing onto the pinion shaft it is best to use a short piece of tubing, with an I.D. large enough to slip over the pinion shaft, to push on the inner race of the bearing.  This will prevent damage to the bearing.*
  **Note:** *To safely remove the rear bearing from the pinion without damage, use MW #57494 bearing puller.  This tool is designed to fit under the shim behind the rear bearing which in turn contacts the inner race of the bearing.  Pressure to the bearing housing and/or the outer race of the bearing will result in damage to the bearing.*
 **3)** *Stand the pinion on end on the pilot stub.  Slide the 57683 preload spacer down the pinion shaft to the rear bearing and put front the pinion bearing (2788) into position.*
 **4)** *Before installing the seal it is a good idea to check the bearing preload, even with a new assembly.  Install yoke or coupler on the pinion, install pinion nut and torque to 140 ft/lbs (if possible it is suggested to use a used pinion nut until final assembly).  Rotate the pinion with an inch/lbs. torque wrench.  The rotational drag should be 7-10 in/lbs (if re-assembling a support with used bearings the rotational drag can be 5-7 in/lbs).  If the rotational drag is too low step up the pinion nut torque in 10 ft/lbs increments and re-check the drag.  Once the correct drag is achieved note the pinion nut torque. Maximum pinion nut torque is 200 ft/lbs.  If the amount of drag is too high the preload spacer is too thin and should be replaced (new spacers will require machining).*
 **5)** *With the bearing preload checked and/or set, remove the yoke or coupler, install the pinion seal,  re-install the yoke or coupler.  Install a new pinion nut with Loctite and torque to the amount determined in step #4.*

**TORQUE SPECS:**
 *Pinion Nut 140 ft/lbs unless higher torque required per step #4 above.*
 *Pinion housing nuts (3/8-24) 30-35 ft/lbs.*
 *Pinion housing nuts (7/16-20) 40-45 ft/lbs.*

**MAINTENANCE REQUIREMENTS:**
 *Periodic visual inspection.  Periodic inspection of bearings and races for excessive heat (discoloration) or wear (pitting). It is recommended that gear oil be changed once a season after initial break-in.*