

Date: August 29, 2017
To: Distribution
From: David B. Augustine
Re: Main Injector ILA Lambertson Seal Installation

Message:

The Main Injector ILA Lambertson magnet uses an 18 inch tapered flange from EVAC. The flange resembles the flange on drawing MD-331910, Flange Weldment MIR Lambertson. Please note that these flanges are heavy. A PALD, portable automotive lifting device, i.e engine hoist, is required as well as the associated lifting fixture, to install the mating flange. The following are the steps to install the EVAC seal drawing MA331512, T/S Conventional Magnet MIR Lambertson Magnet Aluminum Knife Edge Seal.

Each flange seal surface area must be free from scratches at the seal area. It is important to inspect the seal area. It is appropriate to use maximum 400 grit minimum 600 grit wet sand paper, or the equivalent, to lightly polish the seal area around the flange. This action will change the sheen of the flange and bring out any scratches. All scratches in the seal area must be removed. Each flange, centering ring, and seal should be cleaned for vacuum service prior to assembly.

Install seal centering ring over the outside diameter of the flange on the magnet. This is drawing number MA-331511, T/S Conventional Magnet MIR Lambertson Magnet Centering Ring. The centering ring should be spaced on the flange so that the second flange will fit in it. Install aluminum knife edge seal drawing MA-331512, T/S Conventional Magnet MIR Lambertson Magnet Aluminum Knife Edge Seal. The seal should fit on the inner diameter of the seal centering ring and up against the magnet flange. This centering ring will also keep the flanges from slipping past one another while tightening.

Using a PALD and flange lifting fixture, align the second magnet flange to the first and lightly butt together. Install chain clamp, drawing MA-331510, T/S Conventional Magnet MIR Lambertson Magnet Quick Release Flange Coupling. This is a two bolt clamp. The clamp halves should be even with one another. Carefully tighten each bolt evenly to draw the flange halves together thus compressing the seal. As the clamp tightens lightly tap the O.D. of each clamp half. Then continue to tighten the bolts to a minimum torque of 33 foot pounds. The maximum torque is 48 foot pounds. Experience from the MI30 lambertson revealed a leak tight seal at 35 foot pounds of torque on each clamp.

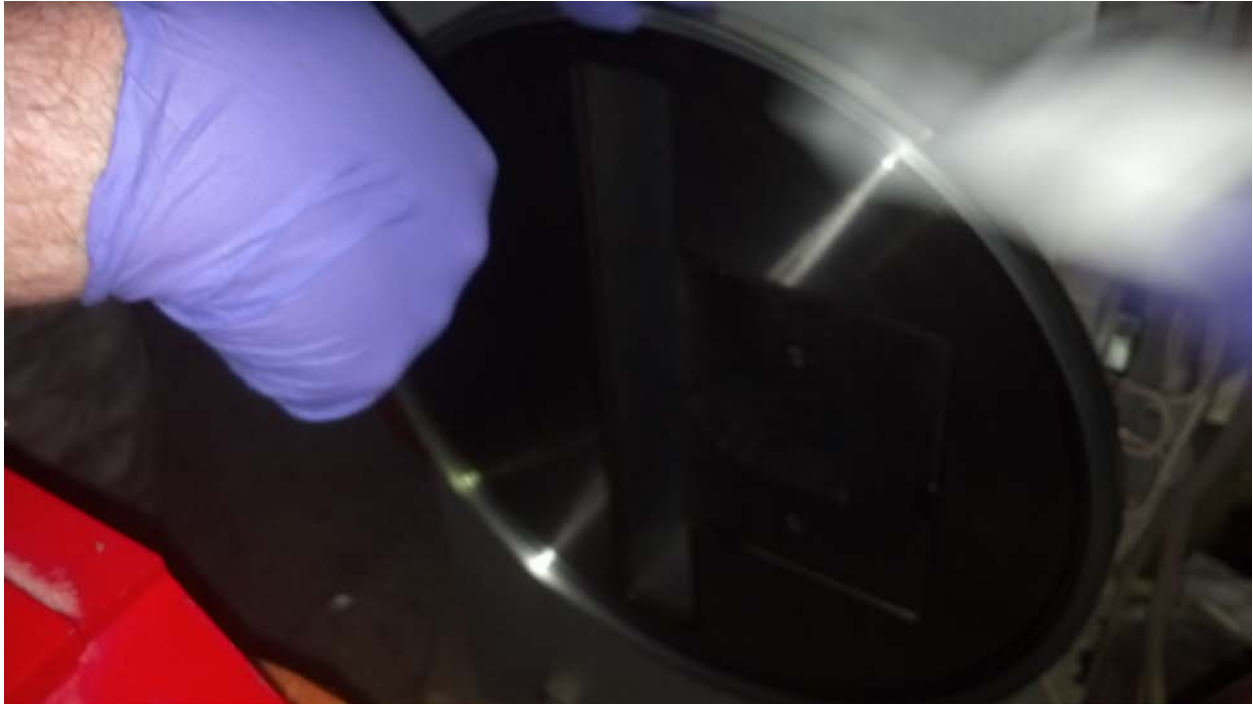


Photo 1: Installing seal retainer ring on O.D of Lambertson flange.



Photo 2: Installing Aluminum Knife Edge Seal under retaining ring and against magnet flange.



Photo 3: Installing the second EVAC Flange. Note use of lifting fixture and PALD.



Photo 4: Disconnection of PALD.

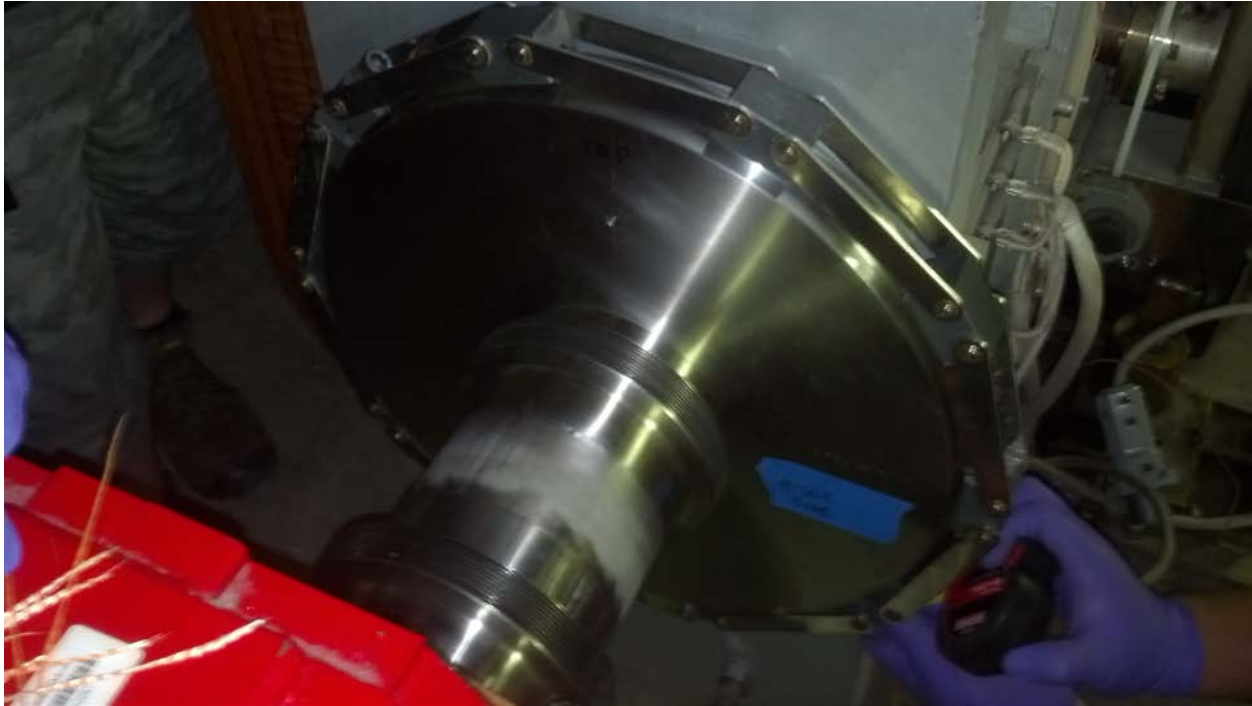


Photo 5: Lifting fixture removed. Note single bolt hole in flange for mounting fixture.