

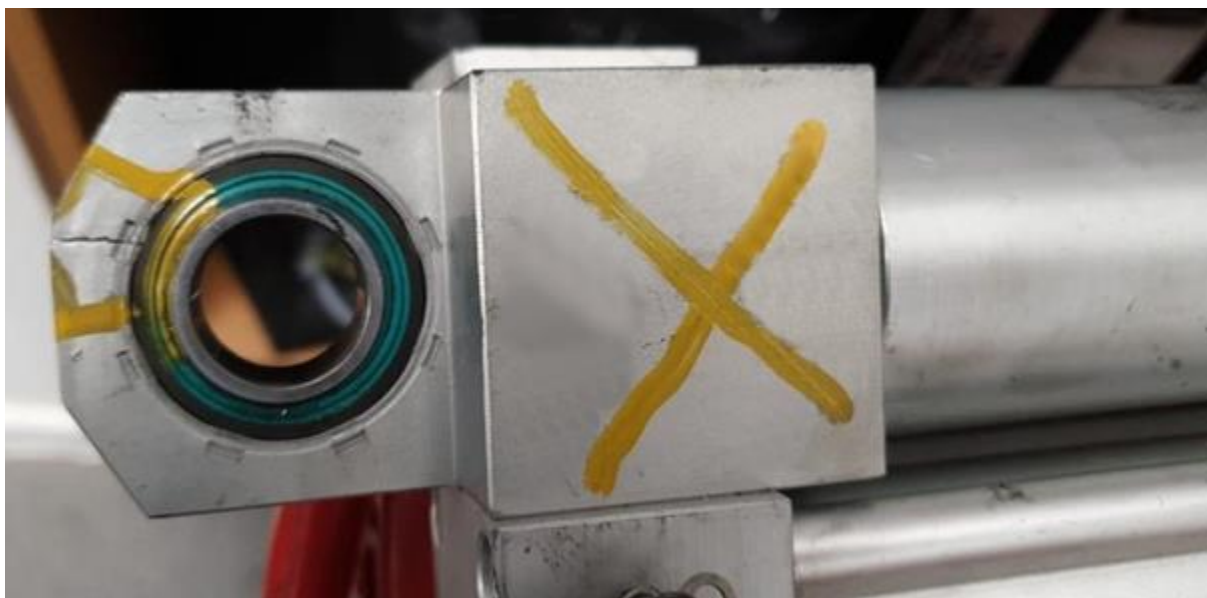
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Restraint cylinder bearing housing failure

NAFLIC has been made aware of the failure of a hydraulic restraint cylinder unit on a Zamperla Air Race device, where cracking propagated across a crimp used to retain the cylinder bearing.

It is understood that the bearing crimps were installed subsequent to the second refurbishment cycle by the component manufacturer, in order to maintain the effectiveness of the interference fit used to retain the bearing, due to repeated bearing replacements during refurbishment.

It is recommended that suitable NDT techniques such as visual inspection should be performed periodically on all safety critical restraint mechanisms, taking note of any stipulations made by the device manufacturer, design reviewer and inspection body. Crimping of bearings installed with an interference fit as shown below is not recommended on components subject to cyclic loading which could lead to premature failure through fatigue cracking.



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