

Rudder bearings are in issue for all the J40s. The lower bearings originally manufactured by Harken either have failed or will fail due to corrosion. Fortunately, there are two manufacturers now making replacement bearings-Jefa, imported by PYI, is an upgraded bearing similar to the original; Edson Corporation also makes a replacement bearing with integral seals instead of the original packing gland. To help those facing decisions on replacement, I have included some correspondence from J owners who have replaced bearings, and also information from each manufacturers representatives. I am also in contact with a J37 owner who is replacing with the Edson bearing and will update with his experience when available. For those who have replaced their bearings and have comments on the installation and/or the installation, please email a writeup (pictures if possible) and I will add it to the material here.

PYI/JEFA Information

From the Cruising J Boat Website, a detailed description of the [replacement of the rudder bearing on the J37 EOS](#)

From Jeff Williams, J40 #6, GRYPHON

Hi - We finally had to bight the bullet and replace the lower bearing about 9 months ago. If you have slop in the lower bearing (movement fore-aft or lateral) the bearing is probably shot. I agree you can forestall the replacement by repacking the rudder post, but this is only a temporary fix once the bearing itself permits movement. I read the J.37 website and was somewhat daunted by it. In the end, our replacement job was much more straightforward. We had difficulty removing the rudder because at some time in the past the lower bearing had been glassed into the hull. It should only be held in place with a couple bolts accessible under the quadrant. Anyway, once the rudder is out, the replacement can be done to the rudder shaft. You have to cut off the old stainless-steel sleeve and the old bearing as well. The new Jefa bearing (PYI) fits beautifully. Be sure to dry fit it to the hull. You must have a new stainless sleeve machined. Fit the new bearing in place on the rudder post, then the sleeve. Once the sleeve is in place, the bearing is permanent! Then the sleeve has to be bogged since it is what keeps water out of the boat. Then put the rudder back in and add a couple set-screws to hold the bearing. It took us one day to drill out the old bearing. One-and-a-half days for the machining. One-and-a-half days for fitting the rudder and bottom paint touchup. Splashed the following morning. Steering is smooth as silk now. Absolutely no movement to the rudder post. An excellent improvement over the 'clunk clunk clunk' that we had endured for about two years. If you happen to be in Brisbane I can HIGHLY recommend someone there. :) Best, Jeff Williams Gryphon (J/40 Hull 6)

From Tom Gregerson, J40 #34, TIGER RAG

Two years ago, I had the lower rudder bearing replaced on our J40 #34 (Tiger Rag), complete with new packing and adjustments as appropriate et al. The lower bearing, which was purchased via PYI, was from a Danish company - JEFA. Visit <http://www.jefa.com>. This bearing proved to be a significant upgrade from stock, and a vast improvement over the Harken solution. The cost to me [from the Shipyard MarineService Center Anacortes] was ~\$ 835.42. I considered the upgrade to be a big success. If anyone would like additional details, let me know. Tom

From Phil Quartararo, PYI, quartararo@pyiinc.com

The bearings available from PYI are described on their website at [J Boat Bearings](#)

3/23/2004

I have a cross reference list that I received from J-boats in April of '01. For the J40 lower bearing it says "OLD OEM bearing Aluminum" = HC126/HC3898. NEW Replacement Plastic HC5259. The same information is shown for the J34, J35, and J37. The Jefa 0641J35 is the same dimensions as the Harken 5259 that was a direct replacement for the HC126/HC3898. Now the tricky part. We sent the 0641J35 to J40's and had reports of everything fitting just right. We have had a report of not fitting. So we recommend caution and confirmation of dimensions. I believe that not all of the boats used the same lower bearing when they left the factory. TPI actually does a pretty good job of keeping historical data on the gear they use. Please continue to update with any information you get regarding rudder bearing history. I am happy to keep any records we get and share them with people who need them. I chatted with TPI a little earlier. They confirmed the HC126, HC3898, and the HC5259 being interchangeable and dimensionally the same. They also agreed that some boats will be different and the records do not tell them about every one that is different. They also confirmed that the PYI/Jefa 0741J35 will fit. I hope this helps. Thank you. Phil Quartararo, PYI Inc.

10/6/2004 regarding the EOS bearing failure

Thank you for contacting PYI regarding this report. To quote the top of the article; "The reason for this failure is not clear,...". I think this needs to be clear before publishing and I do not know if it ever will be. To be honest we prefer not to participate in public forums for commercial promotion unless specifically asked. I was contacted by KKMI regarding this boat and bearing. I was not able to get much more information other than it had enough corrosion that it should be replaced. Any discussion about why electrolysis or galvanic corrosion had occurred was unacceptable and the only solution KKMI would accept was a 100% stainless steel bearing as a warranty replacement, this was not an option. The question of how or why the corrosion started is still not answered. A stainless version of the J35 bearing would be \$2,500.00+. The bearing in the current configuration is \$1,034.00. We get plenty of positive input about the bearing and some comments about the "high price". Would owners buy a stainless unit at 2 1/2 times the cost while a competitor offers an aluminum alternative? Stainless is not always better as it has it's own set of corrosions problems when it is in a stagnant water environment. There is an indication of this on the sleeve that was "flipped" to get good metal in the seals. We have shipped to over 30 of the "J35" bearings and had two problems, both due to electrolysis or galvanic corrosion. Case One as reported by the installer had the anodized lower edge of the bearing abraded so raw aluminum was exposed. The boat was launched without any form of priming, painting, or protection, on the exposed aluminum and it was hit with electrolysis or galvanic corrosion. Case Two is the KKMI unit you are asking about. Jefa rudder bearings have been installed on 20,000 plus boats. These have all been made with the same materials, tolerances, and finish process as the J35 bearing you are asking about. A list of builder using Jefa product can be seen at this link <http://www.jefa.com/reference/reference.htm>. Please reply or call me with any question you may have. Philip Quartararo, PYI Inc.

Edson Information

From Ed. Stiess, Edson, ed@Edsonintl.com

The bearings available from Edson are described on their website at [J Boat Bearings](#)

Edson also included some J-Boat specific attachments in their correspondence.

Bearing [Maintenance Instructions](#)

Drawing of [J40 lower bearing](#)

Specific J-Boat [lower bearing replacement instructions](#)

6/15/2005

There are many issues with rudder bearings and I realize that there are things that boat owners would rather spend their maintenance budget on besides new bearings. Our bearings have substantially more anodizing on them than the Harken bearings did, but an aluminum bearing is subject to damage from corrosion due to many forms of electrical influences. It is best to keep I do not know of anyone including Harken that has been successful with a plastic bearing of this size. Under the loads generated by the rudder the plastic bearings have had problems deforming and breaking. We do custom bearings in stainless but the cost does go up quite a bit. About the only maintenance issue with the bearings is cleaning. When the boat is hauled it should be flushed well and the rudder turned back and forth to help clear any growth or gunk in the bearing. Bearings are built to very close tolerances. We do not like to feel play in the steering, so any growth or gunk in the bearing can cause it to bind up. Ed.

*****NEW***October 2008--MAL DE MER III second rudder bearing replacement**

The original Harken lower bearing was replaced in January 1995 with another Harken bearing due to electrolysis. Very nearly the last of the Harken bearing run. The marina had been hit by a storm, and the emergency power was not standard and caused a lot of damage. The prop was eaten up almost immediately; other problems like the lower bearing surfaced a bit later. The first bearing had seized to the SS sleeve, so steering only worked by steering the whole sleeve and bearing inside the rudder aperture.

On the last trip, I noticed noise coming from the bearing. Steering had become more difficult so after checking the bearing at the normal 2 year haulout, it was time for another replacement. This replacement turned out to be much more difficult and expensive.

Bearing Removal

The first indication that things would be difficult was the removal of the quadrant. Seems like the last replacement didn't use any antisieze, so the bolts were corroded and broke off within the aluminum radial drive. The good news was that the size of the post would allow the rudder to be removed through the drive, and a torch would make short work of the corroded bolts.

Measuring the old bearing provided another surprise. The size of the bearing did not match the J40 spec-it was a J120 size bearing, but would need a bit of grinding to make the exterior dimension fit. So we ordered the Jefa J120 bearing and sleeve from PYI. We waited on the upper bearing to see how much it had deteriorated before deciding to replace it.

J-120 Lower Bearing- Large ID roller bearing.
The bearing is shipped with a stainless steel sleeve to bond to the rudderpost. The sleeve is the same height as the stock unit. You will need to keep the existing sealing system in place.
Bearing part #0641J120, OD=8.49",
Height=2.75", Sleeve height=9".



Removing the rudder and lower bearing provided the next surprise. The Harken bearing was frozen in the hull, so had to be drilled out. For those who don't know, there is a lip on the Harken bearing that covers the SS sleeve and makes it impossible to get the rudder out unless you can get the bearing out first- pounded, drilled, or however.





As you can see from the figures above, the rudder came out with half the bearing still attached after a whole lot of drilling, chiseling and cursing. But then it could be cut off of the rudder to start the replacement.



Of course, that left a hole that also had half a bearing to remove, and needed to be ground out to match the OD of the replacement J120 bearing.



Finally we had the rudder out, and the hull prepared. An inspection of the upper bearing determined that it should be replaced also. This time the J40 bearing was the right size-sort of. The Jefa J40 bearing required another sleeve around the existing Harken sleeve to fit it properly. But it was supplied with the upper bearing and mated properly.



So finally we could get the rudder back into the boat without too much effort.



and even the top bearing fit well. Original alignment was not perfect, but was close enough for the new bearings to be centered.



Then all we had to do was put the whole thing back together and test everything. And barrier coat, repaint, ...Fortunately, it all worked and only cost about triple the first bearing replacement.

CONCLUSIONS Assume the worst and hope for the best when you replace the bearing(s). The Jefa bearings are properly sized and supplied, but not all of the J-40 bearings are quite "stock"-so detailed measurements and planning are required before ordering. The new Jefa bearings claim that they are serviceable and that the roller bearings alone can be replaced if necessary-I hope never to find out. But things now do work very smoothly and quietly again.

A NEW CONTENDER

From Mike Romey, J40 #45, CHINOOK

When I pulled Chinook in early September to do a number of projects in preparation for our trip this Fall down the Intracoastal Waterway to Florida and the Bahamas, I discovered that it was now time to do the long dreaded rudder bearing replacement. At that moment I anticipated using the Jefa bearing that has been written about on the J40 owners website in the past. However, somewhat by accident, I learned of a new bearing being offered by Shuster Marine Bearing (<http://www.shustermarine.com/shopexd.asp?id=64>) of New Bedford MA.

The bearing is made of bronze with delrin needle bearings (see photos 2 and 3). I contacted Mr. James Doe of Shuster and we discussed the bearing at length. I then consulted with the very capable people at my local yard here in Reedville, VA. I also spoke with a yard manager in Deltaville VA who had installed a similar bearing in a J44. My discussions were all positive and resulted in a decision to order the Shuster Bearing. The cost was a bit more than the Jefa bearing. The quote I got on the web without any investigation for the Jefa was \$1800. The Shuster Bearing was just over \$2500. I made the extra expenditure in the hope that I would only have to do this once and that the bearing would last longer than the experiences of others.

The process was like what has been discussed in earlier reports. We first removed the rudder, then cut off the old bearing, apparently an Edson bearing that had been installed sometime before I purchased the boat in 1997. We then had to cut off the stainless sleeve that is the race for the rudder stuffing box. Once both of those were removed while we awaited arrival of the bearing, the rudder tube was scraped and ground completely clean. When the rudder arrived, the delrin sleeve was first installed (photo 4) and epoxied in place. The bearing was mounted on the rudder post, the stainless sleeve was reattached to the post, a bit of a process to get it centered, tightened to compress the sleeve into the epoxy and held in place until set. In my case the whole process took about 10 days, but the delay was mostly due to significant storms, 15" of rain in a 24 hour period was just one of the storms. I would expect with everything on site, the job could be done very quickly - maybe a few days.

While I have not had much opportunity to test out the new bearings - only about an hour and half of motoring in total, I am very pleased with the smooth action. The great feel of the helm is now able to

shine through again. All in all it was a positive experience and I would recommend the bearing to anyone. I wish I had a picture of the finished project, but we were anxious to be launched and I did remember the camera that day. I hope this is of some use. Mike



