

## Return Evaluation Comments

This unit operated for 1 month then 1 tip link broke. It was repaired and operated for 1 year 1 month. The 24 VDC power supply failed intermittently causing vacuum loss. Pumps were replaced operated another 1 year 8 months. It was returned to Minex. Four tip links are broken and rexolite is abraded a little bit by vibration.

## History from Data Sheet

Serial Num: 5C4-009-A

2015-12-(01-10) Rob A's board latest software & 12v jumper (rev a on board sn), Cooler vibration system, Metal Flex bellows 347/304ss, no vac gage, emi filter at hermetic d-sub up-date, Buna-n O-rings at SS base plate & borosilicate glass installed. Noise test completed, very good results, vac good (9-10watts) & cryo (65K) (data saved), HC PAX set-up & installed.

2015-12-17 Delivered to HC (3of5), installed on antenna 2H, 24+48v power supply up-dates added to Rim Box, X & Y poles working very well (data saved), Cryo & Turbo pumps running too high a watts, may have vacuum leak, removed from antenna to return to Minex.

2015-12-21 Checked X & Y poles in hot load, X pole has developed large structure, probably a broken input lead, Y pole OK.

2016-01-22 Photos show one of the Tip Arm Links broken (data saved).

2016-12-24 Disassemble Dewar & remove Pyramid, replaced broken Tip Arm Link, disassembled SS Base plate, during leak test found leak at Bellow assembly, installed new SS Base plate, installed Pyramid & Glass on Feed, started pumpdown & cooldown, all working properly.

2016-01-25 Noise testing, X pole oscillating due to Y poles oscillation, adjusted Y pole Vd down from std 1.20 to 0.97, then adjusted Vg up until Id was at 25.2, X & Y both stopped oscillating (data saved), need to talk to Niklas. Vac & cryo working properly (data saved).

2016-01-27 Delivered to HC (1of2), installed on antenna 2H. Turbo, Cryo & LNAs working properly, Noise test preformed for X & Y (data saved).

2016-02-04 Feed Test Report sent to HC (Elin).

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2017-02-01 24v power supply in Rim box failed a few weeks ago, for some time the 24v was switching on & off, Mark shut the whole system down & tried to restart the system a few times, the result of that was the Vacuum system was off & the Cryo kept running, everything iced up. Matt & Rob while installing Feeds in other antennas this week, had brought a parts to do an infield repair. Try start the vacuum system, lots of error codes & normal start procedures would not start the system, finely got the high speed roughing pump to start, but something was making a loud hammering noise & the system shutdown on its own. We replaced the Turbo & tried to start the system but failed, replaced the Diaphragm pump & the restart went correctly.

2017-02-02 Vacuum system & Cryo pump working fine, 90k/11watts, 65/68K/120watts, told Elin that they could start using Antenna 2H again.

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2018-10-26 Feed delivered from Hat Creek by Jon Richards (2of4).

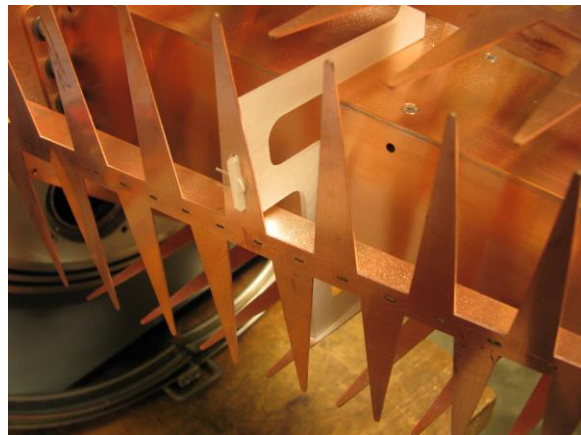
2018-10-(29-30) Removed Feed from transport box into Screen room, checked LNA's condition, both poles have different structures (data saves), biasing working properly (x -.50\_.06\_1.20\_36.1)(y -.50\_.08\_1.20\_42.4), started pumpdown, Diaphragm pump loud, Turbo stalled out at 36k & 51k rpms, multiple restarts, finely got to 90k rpms but over shot rpms & erratic watts (90635rpms/10/30/47watts), shut off & on Turbo, Turbo working ok (90k/10w)(data saved), Control board log not seeing Cryo data, rebooted Control & Cryo boards 3-4 times, data started to display, started cooldown but stopped once it looked correct (270K/282K/77watts)(data saved). Turned off Feed & set aside for inspection of tip.

2018-11-06 Removed Glass to inspect Pyramid & Tip, signs of prolonged vibration, lots of Rexolite dust (stand-offs), all 4 sides of the Tip have damage (data saved), , no signs of moisture, inside of enclosure dusty.

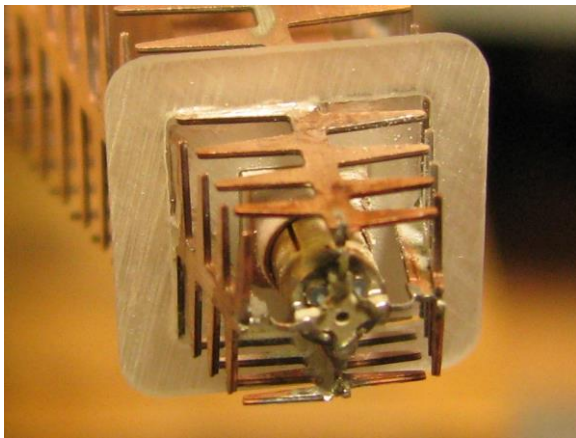
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Rexolite dust on interior of glass



More dust on Arm & Pyramid



Some gap frame to pyramid.

