

Results of EPA horizontal closed orbit correction on May 16,90

J.P.Potier

1-Introduction

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April 2, 1990, following the winter shut down, the EPA closed orbit was measured and found to be

Plane	Peak-peak closed orbit mm	RMS closed orbit mm
H closed orbit	8.12	1.83
V closed orbit	2.80	0.87

The Vertical closed orbit is roughly as 1989 corrections improved it and do not need further improvements as far as EPA performances are concerned.

The Horizontal closed orbit is close to what was recorded in 1989, and the distorsion still large enough to justify some corrections.

2-Measurement and correction of May 1990

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On May 14 after some check on a few pick-up, the horizontal closed orbit was recorded again prior to correct it by quadrupole displacements.

On figure 1 the horizontal closed orbits recorded on April 2 and May 14 are shown: they do not exhibit big differences and the closed orbit recorded May 14 have been used as input for the orbit correction program ORBCOR.

It has been chosen to limit the displacements to two quadrupoles and in these conditions the best choice found by ORBCOR is a correction with HRQFN34 and HRQFW02. On figure 2 is shown the measured horizontal closed orbit before correction and the corrected one predicted by ORBCOR if HRQFN34 is moved 1.43 mm outside and HRQFW02 0.3 mm inside.

Figure 3 shows the predicted horizontal closed orbit and the measured one after correction by the two quadrupoles. The agreement is reasonable and the results are summarized below:

	Peak-peak mm	RMS mm	
Initial closed orbit	6.90	1.58	(May 14)
Predicted closed orbit	3.08	0.96	
Measured closed orbit	3.64	0.86	(May 16)

### 3-Conclusions

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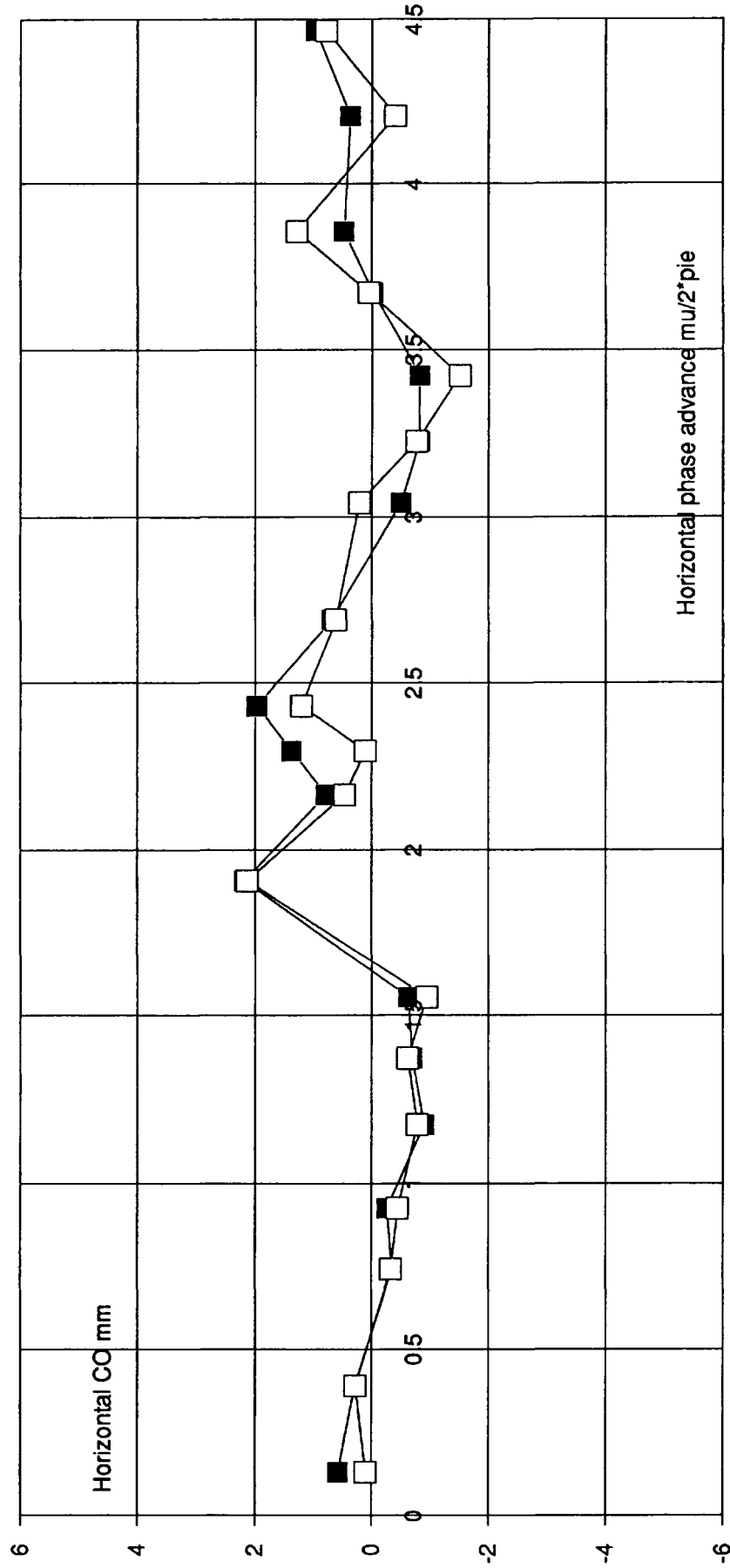
The closed orbit corrections undertaken in 89 and 90 have shown that we can manage the EPA closed orbit in both planes. As the performances of EPA are no more dependant of the closed orbit amplitude, it has been decided to suspend further corrections. The closed orbit, however, will be measured again before and after each major shutdown to keep track of the evolution

### Distribution

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S.Battisti  
J.P.Delahaye  
K.Hubner  
M.Le Gras  
J.H.B.Madsen

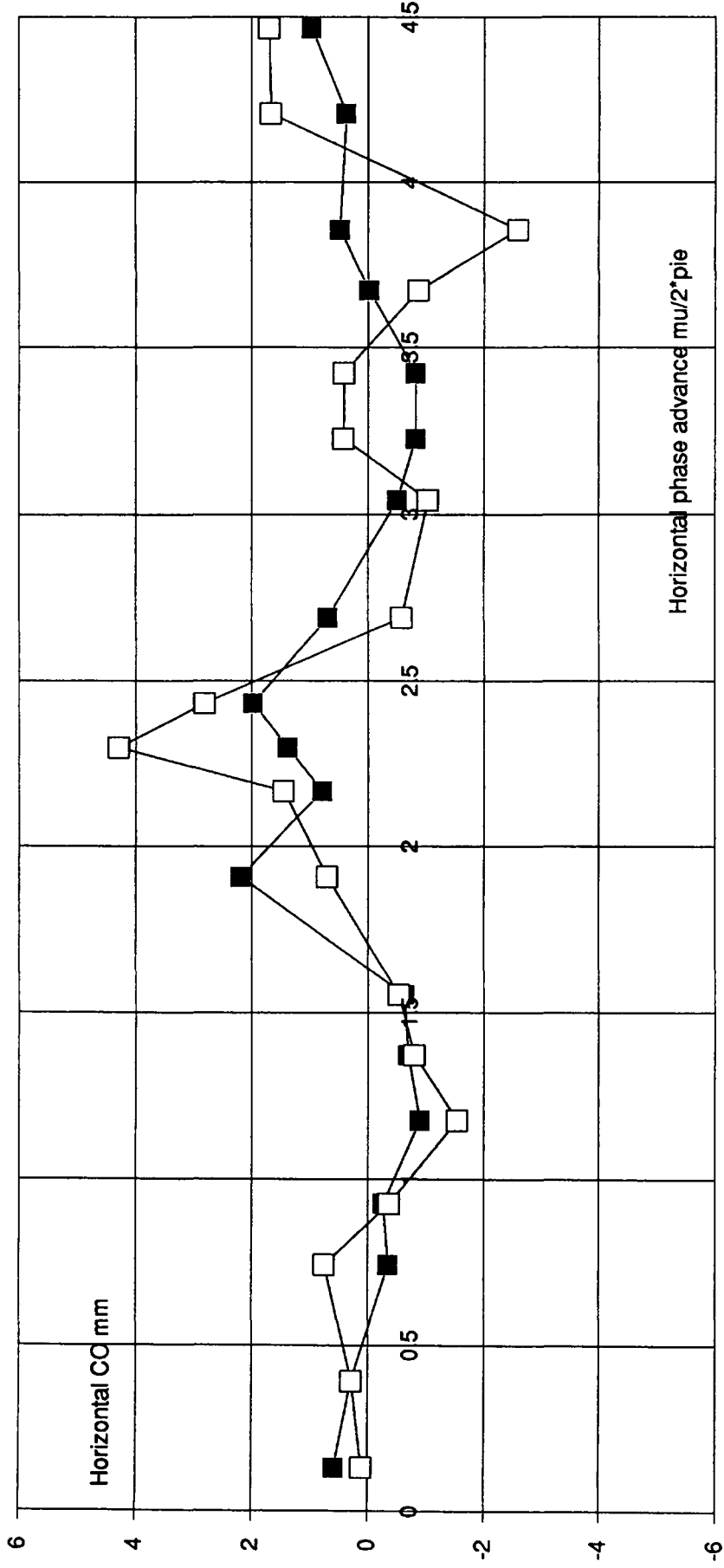
EPA horizontal Closed Orbit May 16,90 and predicted correction  
obtained 3.6 mm peak to peak C.O 3.1 mm



HRQFN34 1.43 mm ext HRQFW02 0.3 mm interne  
■ R-cor14/05 □ R-16/05/90

Figure 3

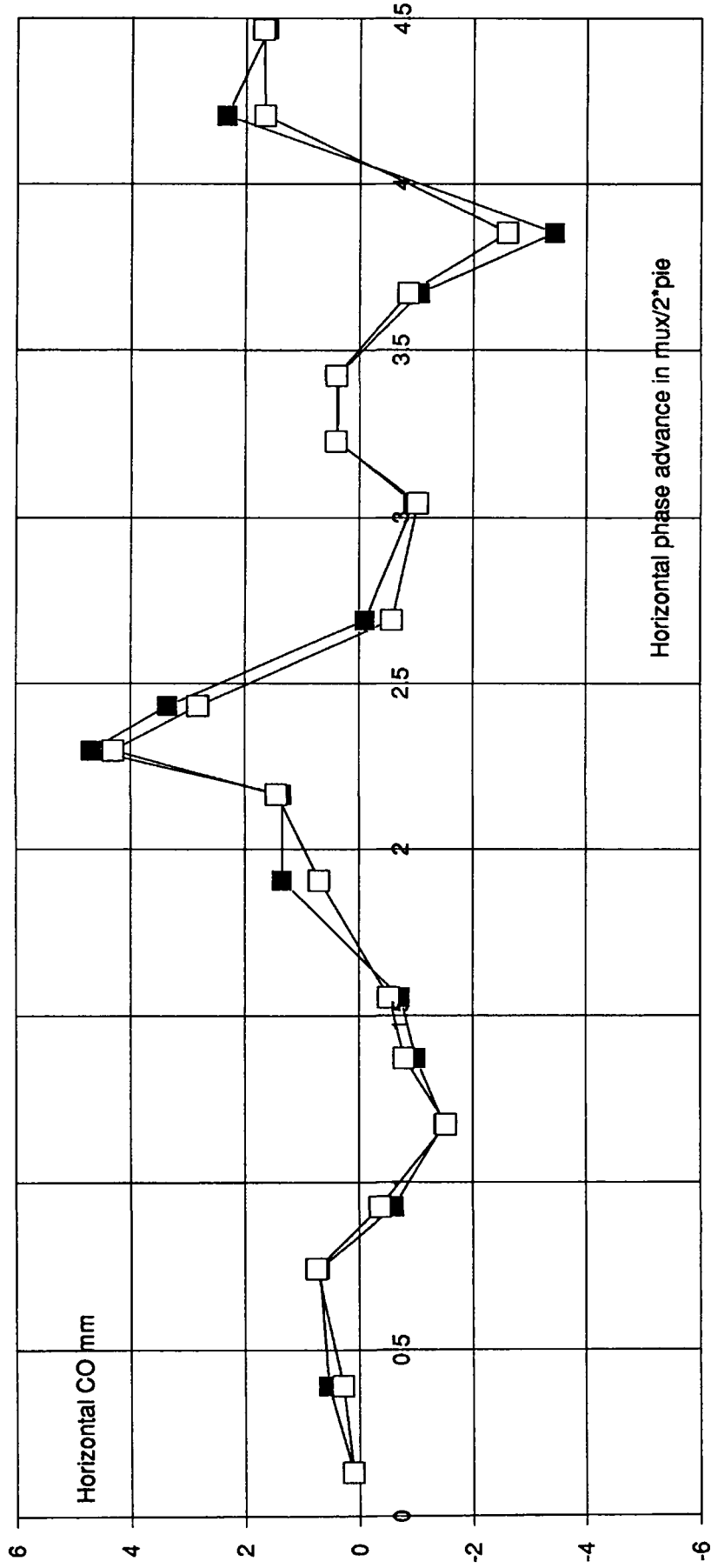
EPA horizontal Closed Orbit May 14,90 and expected correction by micado by moving QFN34 by 1.43 mm and QFW02 by -0.33 mm



■ R-CALC14/05 □ R-14/05/90

FIGURE 2

EPA horizontal Closed Orbit on April 2 and May 14, 1990



■ R-02/04/90 □ R-14/05/90

Figure 1