shown in ***Table 1***. From ***Table 1***, we can see that the counterforce on bearings can be reduced significantly after optimisation, which indicates that the method presented in this paper is effective.

Conclusion

In this paper, the dynamic balance optimisation for the middle shaft system of the cotton comber CM500 is mainly analysed using ADAMS. The optimal centroid of the flange and timing adjustment plate are presented. The results show that the counterforce is reduced by 81.2% and 49.3% in the Y-direction, and 94.1% and 78.3% in the Z-direction for bearings 1 and 2, respectively, which indicates that the method presented in this paper is effective.

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