



# FUJIKURA COMPOSITES

## Characteristic of CFRP Cylindrical Products

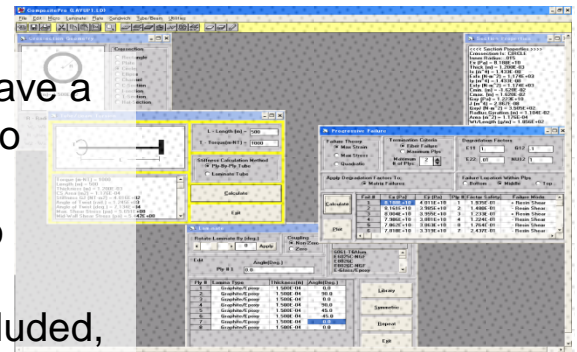
### High Accuracy Processing Technique

- Our shaft is fabricated with high precision by the outside diameter polishing and the inside diameter control technology in the sheet winding process.  
As compared with a hollow-drill-steels pipe, the CFRP shaft with very high accuracy of dimension has the high torsional buckling limit.



### High Lamination Flexibility

- Since CFRP of cylindrical geometry does not have a fear of curvature occurring, it is not necessary to make it symmetrical lamination. Therefore, the flexibility of lamination is very high and it is also possible to adjust rigidity free in one shaft. Moreover, since useless lamination can be excluded, it is possible to control the amount of the material used by designing correctly.



The characteristic calculation software of laminated CFRP

## Strength improvement layering proprietary technology by FUJIKURA COMPOSITES

### Simultaneous Multi Ply Winding\* \* WO2010/084809 A1

- As a result of analyzing the structure by sheet winding, we developed the laminated structure which controls the progress of delamination and the damage to a fiber which occur inside the CFRP shaft.
- We find out the optimal lamination by calculation and knowledge based on exam to the demand characteristic, and hold down the amount of the material used to necessary minimum.



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