

NAG Fortran Library Routine Document

F06FTF

Note: before using this routine, please read the Users' Note for your implementation to check the interpretation of ***bold italicised*** terms and other implementation-dependent details.

1 Purpose

F06FTF applies a real elementary reflection (Householder matrix) P , as generated by F06FRF, to a given real vector:

$$\begin{pmatrix} \delta \\ y \end{pmatrix} \leftarrow P \begin{pmatrix} \delta \\ y \end{pmatrix},$$

where y is an n element real vector and δ a real scalar.

2 Specification

```
SUBROUTINE F06FTF (N, DELTA, Y, INCY, ZETA, Z, INCZ)
  INTEGER          N, INCY, INCZ
  double precision DELTA, Y(*), ZETA, Z(*)
```

3 Description

None.

4 References

None.

5 Parameters

- | | | |
|----|---|---------------------|
| 1: | N – INTEGER
<i>On entry:</i> n , the number of elements in y and z . | <i>Input</i> |
| 2: | DELTA – double precision
<i>On entry:</i> the original scalar δ .
<i>On exit:</i> the transformed scalar δ . | <i>Input/Output</i> |
| 3: | Y(*) – double precision array
<i>On entry:</i> the original vector y .
<i>On exit:</i> the transformed vector y . | <i>Input/Output</i> |
| 4: | INCY – INTEGER
<i>On entry:</i> the increment in the subscripts of Y between successive elements of y . | <i>Input</i> |
| 5: | ZETA – double precision
<i>On entry:</i> the scalar ζ , as returned by F06FRF. If $\zeta = 0$, P is assumed to be the unit matrix and the transformation is skipped.
<i>Constraint:</i> if ZETA = 0, N = 0. | <i>Input</i> |

- 6: $Z(*)$ – *double precision* array *Input*
 On entry: the vector z , as returned by F06FRF.
- 7: INCZ – INTEGER *Input*
 On entry: the increment in the subscripts of Z between successive elements of z .

6 Error Indicators and Warnings

None.
