NAG Toolbox for MATLAB

g05yg

1 Purpose

g05yg initializes the Neiderreiter generator. It must be called before using g05yh and is required if a Neiderreiter sequence is wanted from g05yj or g05yk.

2 Syntax

```
[iref, ifail] = g05yg(idim, iskip)
```

3 Description

g05yg places vital initialization information into the array **iref** for subsequent use by the generator functions.

4 References

None.

5 Parameters

5.1 Compulsory Input Parameters

1: **idim – int32 scalar**

the number of dimensions required.

Constraint: $1 \leq$ **idim** ≤ 40.

2: **iskip – int32 scalar**

The number of terms of the sequence to skip on initialization.

Constraint: **iskip** $\leq 2^{15}$.

5.2 Optional Input Parameters

None.

5.3 Input Parameters Omitted from the MATLAB Interface

None.

5.4 Output Parameters

1: **iref**(**2000**) **– int32 array**

Contains initialization information for use with the generator functions. **iref** should not be altered in any way between initialization and calls of the generator functions.

2: **ifail – int32 scalar**

0 unless the function detects an error (see Section 6).

6 Error Indicators and Warnings

Errors or warnings detected by the function:

ifail $= 1$

On entry, **idim** < 1 or **idim** > 40.

ifail $= 2$

The value of **iskip** $> 2^{15}$.

ifail $= 3$

A system error has occurred. Please contact NAG.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

```
idim = int32(6);
iskip = int32(0);
n = int32(2);
[iref, ifail] = g05yg(idim, iskip);
[quasi, irefOut, ifail] = g05yh(n, iref)
```

```
quasi =
    0.0059    0.4980    0.9160    0.1782    0.1626    0.6660
    0.5059    0.9980    0.1660    0.8032    0.7876    0.3535
irefOut =
     array elided
ifail =
           0
```