

## NAG Library Chapter Contents

### F12 – Large Scale Eigenproblems

F12 Chapter Introduction – a description of the Chapter and an overview of the algorithms available

<b>Routine Name</b>	<b>Mark of Introduction</b>	<b>Purpose</b>
F12AAF	21	nagf_sparseig_real_init Initialization routine for (F12ABF) computing selected eigenvalues and, optionally, eigenvectors of a real nonsymmetric sparse (standard or generalized) eigenproblem
F12ABF	21	nagf_sparseig_real_iter Selected eigenvalues and, optionally, eigenvectors of a real nonsymmetric sparse eigenproblem, reverse communication
F12ACF	21	nagf_sparseig_real_proc Selected eigenvalues and, optionally, eigenvectors of a real nonsymmetric sparse eigenproblem, postprocessing for F12ABF
F12ADF	21	nagf_sparseig_real_option Set a single option from a string (F12ABF/F12ACF/F12AGF)
F12AEF	21	nagf_sparseig_real_monit Provides monitoring information for F12ABF
F12AFF	21	nagf_sparseig_real_band_init Initialization routine for (F12AGF) computing selected eigenvalues and, optionally, eigenvectors of a real nonsymmetric banded (standard or generalized) eigenproblem
F12AGF	21	nagf_sparseig_real_band_solve Selected eigenvalues and, optionally, eigenvectors of a real nonsymmetric banded eigenproblem, driver
F12ANF	21	nagf_sparseig_complex_init Initialization routine for (F12APF) computing selected eigenvalues and, optionally, eigenvectors of a complex sparse (standard or generalized) eigenproblem
F12APF	21	nagf_sparseig_complex_iter Selected eigenvalues and, optionally, eigenvectors of a complex sparse eigenproblem, reverse communication
F12AQF	21	nagf_sparseig_complex_proc Selected eigenvalues and, optionally, eigenvectors of a complex sparse eigenproblem, postprocessing for F12APF
F12ARF	21	nagf_sparseig_complex_option Set a single option from a string (F12APF/F12AQF)
F12ASF	21	nagf_sparseig_complex_monit Provides monitoring information for F12APF
F12ATF	24	nagf_sparseig_complex_band_init Initialization routine for F12AUF computing selected eigenvalues and, optionally, eigenvectors of a complex banded (standard or generalized) eigenproblem.
F12AUF	24	nagf_sparseig_complex_band_solve Selected eigenvalues and, optionally, eigenvectors of complex non-Hermitian banded eigenproblem, driver
F12FAF	21	nagf_sparseig_real_symm_init Initialization routine for (F12FBF) computing selected eigenvalues and, optionally, eigenvectors of a real symmetric sparse (standard or generalized) eigenproblem

F12FBF	21	nagf_sparseig_real_symm_iter Selected eigenvalues and, optionally, eigenvectors of a real symmetric sparse eigenproblem, reverse communication
F12FCF	21	nagf_sparseig_real_symm_proc Selected eigenvalues and, optionally, eigenvectors of a real symmetric sparse eigenproblem, postprocessing for F12FBF
F12FDF	21	nagf_sparseig_real_symm_option Set a single option from a string (F12FBF/F12FCF/F12FGF)
F12FEF	21	nagf_sparseig_real_symm_monit Provides monitoring information for F12FBF
F12FFF	21	nagf_sparseig_real_symm_band_init Initialization routine for (F12FGF) computing selected eigenvalues and, optionally, eigenvectors of a real symmetric banded (standard or generalized) eigenproblem
F12FGF	21	nagf_sparseig_real_symm_band_solve Selected eigenvalues and, optionally, eigenvectors of a real symmetric banded eigenproblem, driver

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