The spread of a matrix is simply defined as the maximum absolute value of difference between any two eigenvalues of that matrix. There are many existing papers dealing with bounding the spread of a matrix in general. Of interest to us is the spread of $n$-by-$n$ normal matrices with entries in closed set. In this paper, we are interested in the classes of real skew-symmetric matrices, complex Hermitian matrices and complex skew-Hermitian matrices, and we determine the structure of these matrices, in each class, when their spread attains the maximum value.