

**`_diag()`** — Replace diagonal of a matrix

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## Syntax

`void _diag(numeric matrix Z, numeric vector v)`

## Description

`_diag(Z, v)` replaces the diagonal of the matrix  $Z$  with  $v$ .  $Z$  need not be square.

1. If  $v$  is a vector, the vector replaces the principal diagonal.
2. If  $v$  is  $1 \times 1$ , each element of the principal diagonal is replaced with  $v$ .
3. If  $v$  is a void vector ( $1 \times 0$  or  $0 \times 1$ ),  $Z$  is left unchanged.

## Conformability

`_diag(Z, v)`:

*input:*

$Z$ :  $n \times m, n \leq m$

$v$ :  $1 \times 1, 1 \times n,$  or  $n \times 1$

or

$Z$ :  $n \times m, n > m$

$v$ :  $1 \times 1, 1 \times m,$  or  $m \times 1$

*output:*

$Z$ :  $n \times m$

## Diagnostics

`_diag(Z, v)` aborts with error if  $Z$  or  $v$  is a view.

## Also see

[M-5] **`diag()`** — Create diagonal matrix

[M-4] **`manipulation`** — Matrix manipulation