A bit more detail on Gaschnig's heuristic

In the standard slider puzzle, to move a tile from square *A* to square *B*, we check two requirements:

R1: *A* is horizontally or vertically adjacent to *B*;
R2: *B* is blank.

Now we get three relaxed problems via these two requirements:
1. R1 only: A tile can move from square *A* to square *B* if *A* is horizontally or vertically adjacent to *B;*
2. R2 only: A tile can move from square *A* to square *B* if *B* is blank;
3. neither: A tile can move from square *A* to square *B*.

Misplaced tiles (or Hamming) distance is case (3).
Manhattan distance is case (1).
Gaschnig's heuristic is case (2); it is at least as good as Misplaced tiles, and there exist instances where it is more a accurate estimate than Manhattan distance. (See example below.)

Compute it like this:
i. If the blank is where it should be in goal configuration, move any mismatched tile into the blank.
ii. Now find the tile that should go in the blank's location, and teleport it there.
iii. Repeat (i. and ii.) until all are in their final positions.