

HD Method

The HD method is an intermediate/advanced speedsolving method for the 2x2. The main idea behind the method is that all pieces are solved in two steps. First, all pieces are oriented, then, all pieces are permuted. HD is relatively comparable to EG, with a similar movecount, ergonomics, and ability one-look. However, HD has a much easier learning curve, as well as fewer algorithms and a higher chance of very short, fast singles.

Steps:



1) V+CO

All corners are oriented in such a way that on both the U and D face, there is a group of at least three matching stickers, constituting the “V.”



2) NLL

NLL, or Neuro Last Layer, is the step that permutes the remaining pieces. It has 41 cases, including PBL, and is named for Neuro on Speedsolving Forums.

Suggested Order of Learning:

One advantage of HD is that it is an easy method to ease into. In its simplest form (the Guimond method), it only requires 21 algorithms, 16 of which are very intuitive and trivial, while the remaining 5 are PBL. The EG method is shown on the right for comparison. As shown below, a major drawback of EG that is not present in HD is that algs must be learned in large increments.

Guimond
(21 algs, most trivial)

Ortega
(12 algs)

CLL
(42 new algs, all necessary)

HD
(36 new algs, learnable gradually)

EG
(80 new algs, 40 necessary at a time)

HD+
(108 new algs, learnable gradually)

Expanded EG (LEG, TCLL)
(123 new algs, 80 necessary for TCLL)

Step One: V+CO

HD's first step is done quite similarly to that of the Guimond method. The difference is that in HD, the orientation algorithm may be added on to or cancelled into or out of. This step should only take about 4 to 5 moves. If you are struggling to get that efficient, then practice 3-move cases. For efficient examples, see the example solves.

Step Two: NLL

Standard NLL has 41 algorithms, 5 of which are the standard PBLs. NLLs are short and ergonomic, leading to the possibility of very fast execution. To eliminate the necessity of a rotation before the algorithm, one can choose to plan their solve so DFR is dot, use D moves when NLL is reached, or learn algorithms for each possible position of the D face. This, called HD+, is a similar concept to that of LEG, and requires 108 algorithms that can be learned and implemented gradually.

Comparison to EG:

Using computer generated optimal movecounts, with the exception of V+CO, it is determined that EG and HD have about the same count, both at 13-14 moves on average.

Example Solves:

1- Scramble: U2 F' U F' R' U F R' U' Solve: x' U' F R' U R' F2 R F' R U R2 F2 U

Notes: The last move in V+CO, R2, is cancelled.

2- Scramble: U' R2 U' F2 U' F R U F' Solve: z2 x' L' U' L' U' L U2 y' R2 U R2 U

3- Scramble: R F' U' R2 U2 F2 U' F R' Solve: y z R' F R F' D R2 U' R2 U R2 U'

Notes: pretty lucky scramble for LBL/CLL, but fewer move solve for HD.

4- Scramble: R2 F R U2 F2 R U' F U2 Solve: x' R U' F R U R' U2 R2 F2 U R2 U' R2 U

5- Scramble: F2 U' F2 R' F U2 F U' R Solve: z2 U2 R2 U' R U R' U R' F2 R F' R' F2 R2 U'

6- Scramble: U' R' F' U' F' U R' F2 Solve: y F R U' R' U' y' R2 U R2 U' F2 R2 U2

7- Scramble: U2 F R' F U' F' U' R2 U Solve: z y R U R' U' x' U' R2 U R2 U' R2 Notes: can get 1.2 second solve fairly easy if 1-looked

8- Scramble: R' F2 U R' F U2 R' U' Solve: z2 x R U' R' U R2 F2 U R2 U' R2

9- Scramble: R2 F' R F R2 U' R U' R U' Solve: z2 x R2 U' R' y R U R' U F' U' R U' R' U Notes: Didn't realize right of the bat there was a 3 move v+co.

10- Scramble: U2 F' R' F U' F2 R U2 R' Solve: y2 x' U R' U R U2 R y U' R2 U' R2 U

For new, great NLL algs, visit

https://docs.google.com/document/d/1EMpBGXBhoFCaPWgazLReN_VNbYLMhyXVavk7QYIdJI4/edit?usp=sharing

^ These algs are good ^

Algorithms

V permuted:

F opposite:

(U2) R2 U R2 U' R2

F' R' U' R F U' F R F'

L2 U L2 U' L2

R U' R' F U' R' F2 R

R opposite:

(U) R' F R F' U R U2 R'

(U) R2 U' R2 U R2

F2 U' R2 U R2

(U') R2 U' F2 U R2

F bar:

R F' R U R2 U' R' F R

(U') L' U' R2 F R F' R U2 R

R U R' F2 R F' R' U R2

(U) R' U' R2 F R U' R U2 R

R bar:

(U) R2 D' R2 U R2 U' R2

R U2 R' D' R U' R' F'

R U' R U R' U F U' R

R U R' U F' U' R U' R'

Solved:

R U R' F2 R F' R U R2 F2

Diagonal:

y R U R' D R2 D' R U' R'

Bar on L:

F opposite:

xxxxxxxxxxxxxxxxxxxxxxxx

R opposite

xxxxxxxxxxxxxxxxxxxxxxxx

F bar

xxxxxxxxxxxxxxxxxxxxxxxx

R bar:

xxxxxxxxxxxxxxxxxxxxxxxx

Solved:

xxxxxxxxxxxxxxxxxxxxxxxx

Diagonal:

xxxxxxxxxxxxxxxxxxxxxxxx

Bar on B:

F opposite:

xxxxxxxxxxxxxxxxxxxxxxxx

R opposite

xxxxxxxxxxxxxxxxxxxxxxxx

F bar

xxxxxxxxxxxxxxxxxxxxxxxx

R bar:

xxxxxxxxxxxxxxxxxxxxxxxx

Solved:

xxxxxxxxxxxxxxxxxxxxxxxx

Diagonal:

xxxxxxxxxxxxxxxxxxxxxxxx

Opposite on L:

F opposite:

xxxxxxxxxxxxxxxxxxxxxxxx

R opposite

xxxxxxxxxxxxxxxxxxxxxxxx

F bar

xxxxxxxxxxxxxxxxxxxxxxxx

R bar:

xxxxxxxxxxxxxxxxxxxxxxxx

Solved:

xxxxxxxxxxxxxxxxxxxxxxxx

Diagonal:

xxxxxxxxxxxxxxxxxxxxxxxx

Opposite on B:

F opposite:

xxxxxxxxxxxxxxxxxxxxxxxx

R opposite

xxxxxxxxxxxxxxxxxxxxxxxx

F bar

xxxxxxxxxxxxxxxxxxxxxxxx

R bar:

xxxxxxxxxxxxxxxxxxxxxxxx

Solved:

xxxxxxxxxxxxxxxxxxxxxxxx

Diagonal:

xxxxxxxxxxxxxxxxxxxxxxxx

Diagonal swap:

F opposite:

xxxxxxxxxxxxxxxxxxxxxxxxxx

R opposite

xxxxxxxxxxxxxxxxxxxxxxxxxx

F bar

xxxxxxxxxxxxxxxxxxxxxxxxxx

R bar:

xxxxxxxxxxxxxxxxxxxxxxxxxx

Solved:

xxxxxxxxxxxxxxxxxxxxxxxxxx

Diagonal:

Xxxxxxxxxxxxxxxxxxxxxxxxxx