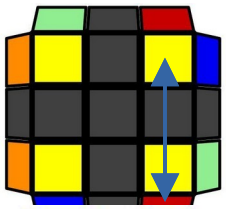
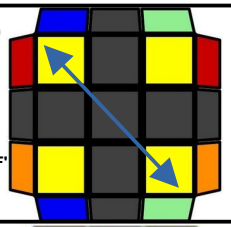
## O



Adjacent Swap (inv)

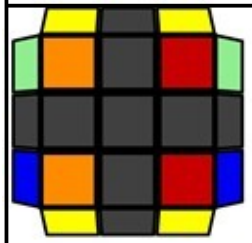
R U R' F' R U R' U' R' F R2 U' R'



Diagonal Swap (inv)

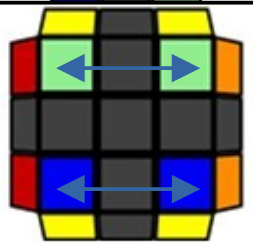
F R U' R' U' R U R' F' R U R' U' R' F R F'

## H



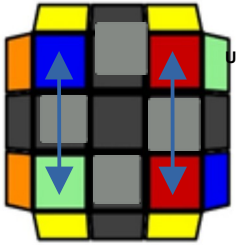
Columns (inv)

R U2 R' U' R U R' U' R U' R'



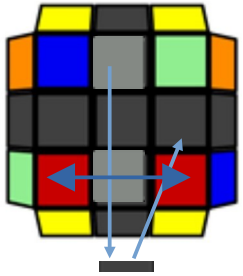
Rows (inv)

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



Column (Pi X)

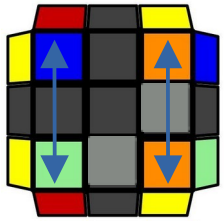
U R U2' R' (R' F R F') U2 (R' F R F')



Row (Pi col.)

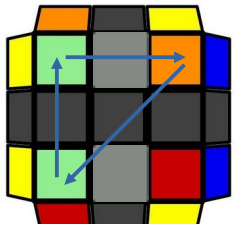
(U2) r U' r2' D' r U' r' D r2 U r'

## Pi



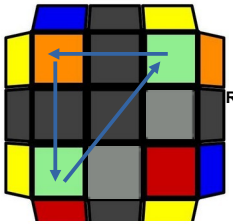
Right Bar (inv.)

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



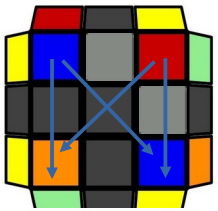
Left Bar (inv.)

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



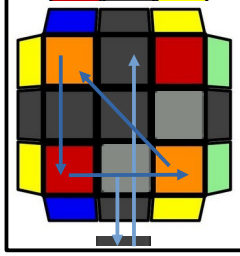
Forward Slash

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



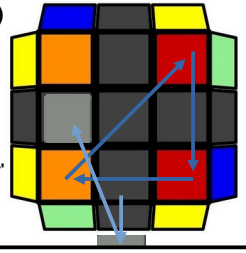
Back Slash

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



X (H col.)

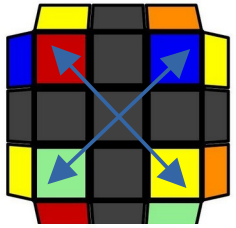
(U') R' F R U F U' (R U R' U') F'



Columns (H row )

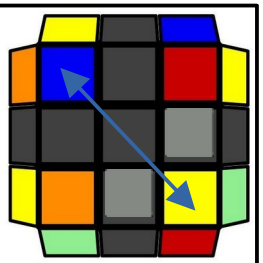
(U') r U' r2' D' r U r' D r2 U r'

## S



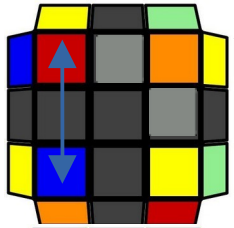
Left Bar

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



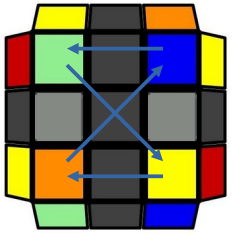
Right Bar

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



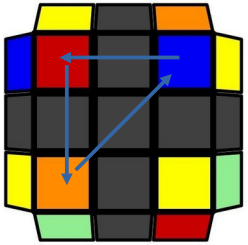
X

(U) L' U2 L U2' L F' L' F



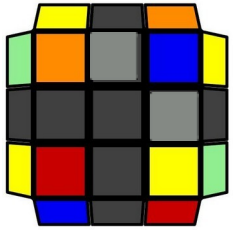
Columns

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



Back Slash

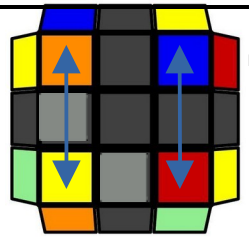
(U) R U' L' U R' U' L



Forward Slash

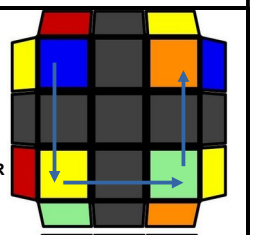
(U) F R' F' R U2 R U2' R'

## As



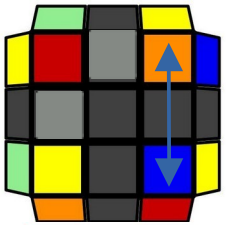
Left Bar

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



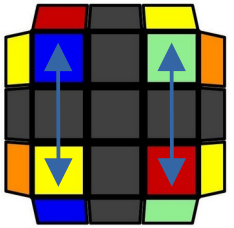
Right Bar

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



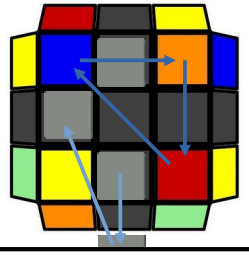
X

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



Columns

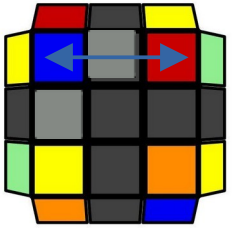
(U') R2 D R' U R D' (R' U R' U') R U' R'



Forward Slash

(U') (R' F R F') r U r'

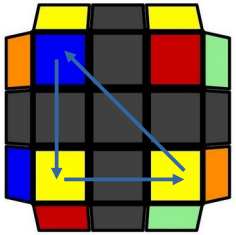
(U') L' U R U' L U R'



Back Slash

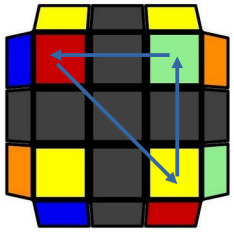
(U') F' L F L' U2' L' U2 L

## U

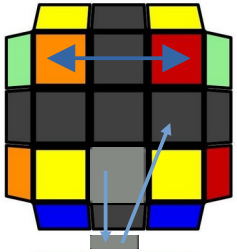


### Forward Slash | back Slash

(U2) R2 D R' U2 R D' R' U2 R'



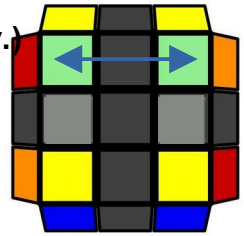
R2' D' R U2 R' D R U2 R



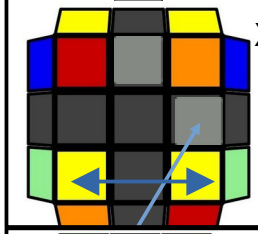
### Front Row (T row)

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

### Rows (inv.)



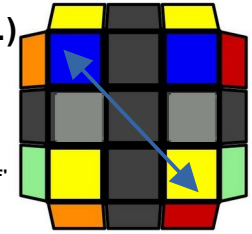
(U') F R2 D R' U R D' R2' U' F'



### X (T back row)

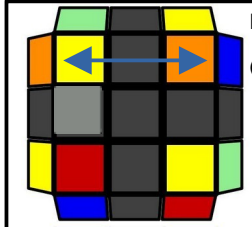
(U2) r U' r' U r' D' r U' r' D r

### Back Row (inv.)



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

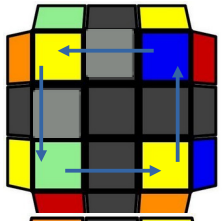
## L



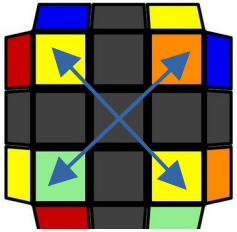
### Mirror (T right bar)

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

### Inverse



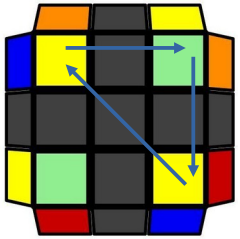
(U2) (F R' F' R) (U R U' R')



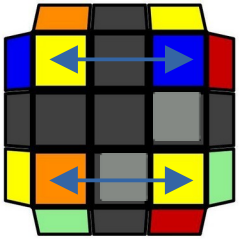
### Pure

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

### Front Commutator (U / )



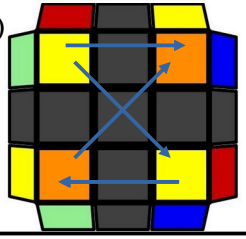
(U2) R U2 R D R' U2 R D' R2'



### Diag

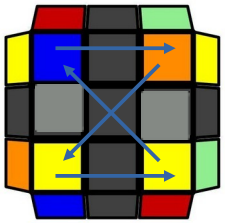
(U2) R U2' R2' F R F' R U2' R'

### Back Commutator (U \)



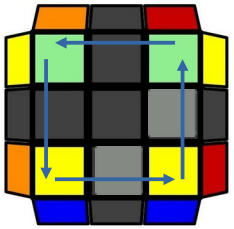
(U) R' U2 R' D' R U2 R' D R2

## T



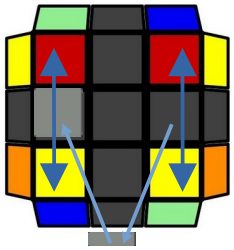
### Left Bar (L inverse)

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



### Rows (Ufrow^-1)

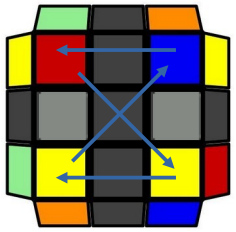
F R' F R2 U' (R' U' R U) R' F2



### Back Row (U x)

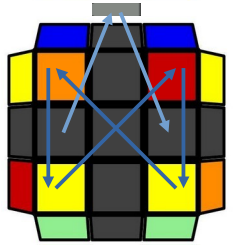
r' D' r U r' D r U' r U r'

### Right Bar (L mirror)



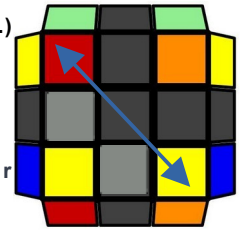
(U) (L' U' L U) (L F' L' F)

### Front Row (inv.)



r' U r U2' R2' F R F' R

### Columns (inv.)



(U2) r2' D' r U r' D r2 U' r' U' r

- This document is a “cheat sheet” (easy to print) for beginner with CMLL’s (Roux method) adapted from Kian’s document : https://docs.google.com/document/d/1S_y2evAxJ2vMMFDtfGSOsgHuDMYR-sEjoEU_mtSD7Qc/edit

- Grey squares indicates a edge that will have a changing orientation (and eventually changing position, in this case if it goes on bottow side then movements will be indicated by light blue arrows (helps for EO) ).

- In parenthesis there is the name of the opposite algs (if they are in a same line, then there is just a pipe |, and “inv.” for involutions. (the alg is his own opposite) )

- Dark blue arrows can help recognizing the case / understanding moves.

- This doc isn’t finished, a lot of things to do so feel free to contribute : https://gitlab.com/adrip/cmll-cheat-sheet

- Contact me : adrien.no@proton.me

Color Coding
Green = R U R' U' Family
Blue = R U R' U R U2 R' Family
Orange = R F' R' F Family