

PLATFORM: ALTERNATIVE METHOD LAST LAYER

STEP ONE
STEP TWO

AUTHOR: MUNARO RICCARDO

CODE WCA: 2014MUNA01

INTRODUCTION:

Welcome!

This guide is a alternative solution for LL(Last Layer)

The step one is the creation block $1 \times 1 \times 3$.

There are 50 cases and 25 algorythms.

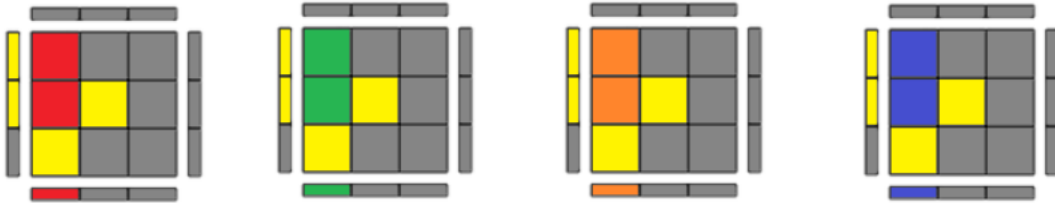
The step two is the solution block $1 \times 1 \times 3$.

There are 71 cases and 71 algorythms.

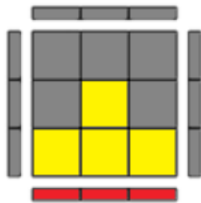
Good vision!

STEP ONE

When you complete first and second layer with cross and F2L you can create a block 1x1x3, a block 1x1x3 can have four colors:



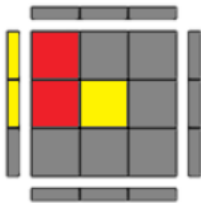
When you use an algorithm you solve block 1x1x3.



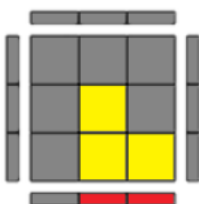
For simpleness I'll use one color.

WARNING:

If in the last layer you don't any case, you can create a parzial block and in the next you can solve a block 1x1x3.
Example:



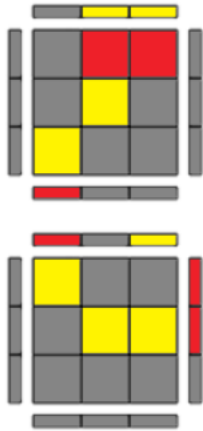
F' L F L' U' L' U L



ANTI-QUANTIK BLOCK LEFT

ALGO: L' U' L U L' F' L' F

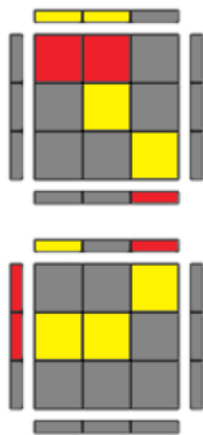
CASES:



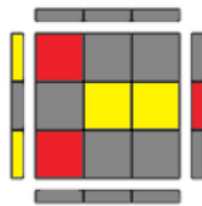
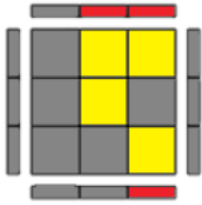
ANTI-QUANTIK BLOCK RIGHT

ALGO: R' U R' U' R' F R F'

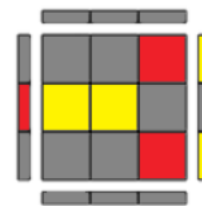
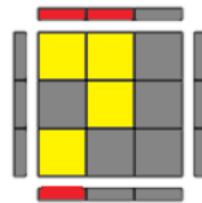
CASES:



ANTI-QUANTIK SIX ANTI-CLOCKWISE
 ALGO: F' U' L' U L F
 CASES:



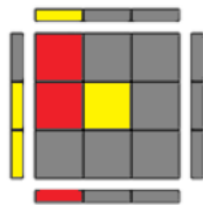
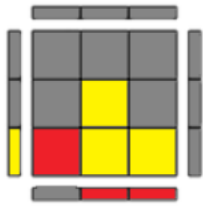
ANTI-QUANTIK SIX CLOCKWISE
 ALGO: F U R U' R' F'
 CASES:



QUANTIK DOUBLE LEFT

ALGO: L' U' L2 F' L' F2 U' F'

CASES:



QUANTIK DOUBLE RIGHT

ALGO: R U R2 F R F2 U F

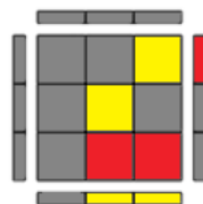
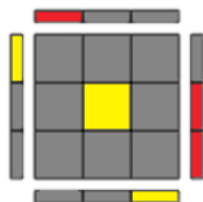
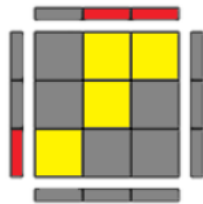
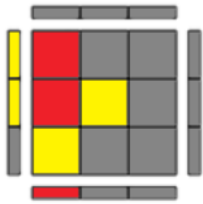
CASES:



QUANTI-K BLOCK ANTI-CLOCKWISE

ALGO: F' L F L' U' L' U L

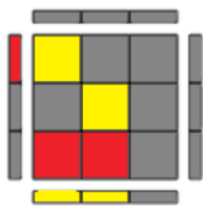
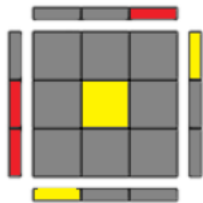
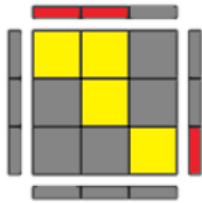
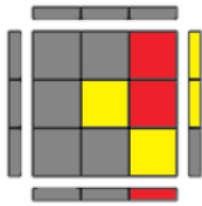
CASES:



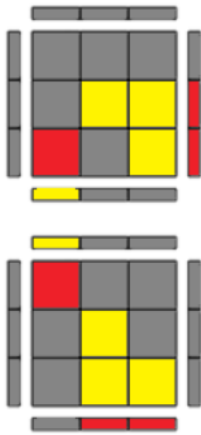
QUANTI-K BLOCK CLOCKWISE

ALGO: F R' F' R U R' U' R'

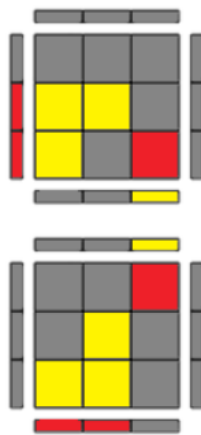
CASES:



QUANTI8 EIGHT LEFT
 ALGO: L F R' F' L' F R F'
 CASES:



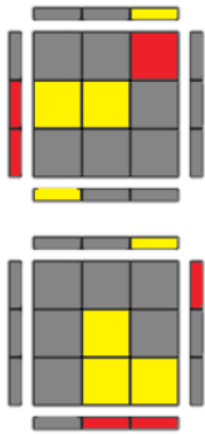
QUANTI8 EIGHT RIGHT
 ALGO: R' F' L F R F' L' F
 CASES:



QUANTIK NORMAL LEFT

ALGO: L' U R U' L U R'

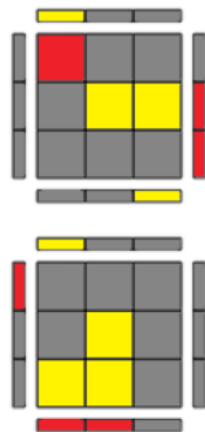
CASES:



QUANTIK NORMAL RIGHT

ALGO: R U' L' U R' U' L

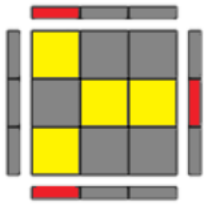
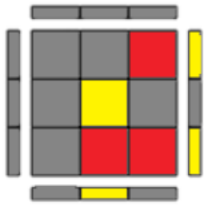
CASES:



QUANTIK SIX ANTI-CLOCKWISE

ALGO: F' L' U' L U F

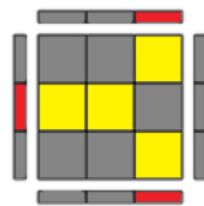
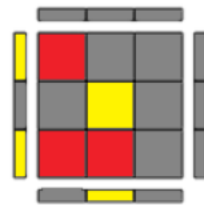
CASES:



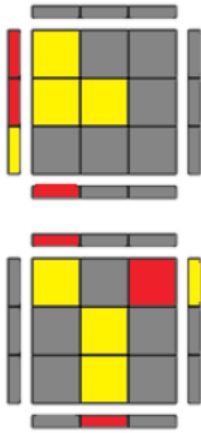
QUANTIK SIX CLOCKWISE

ALGO: F R U R' U' F'

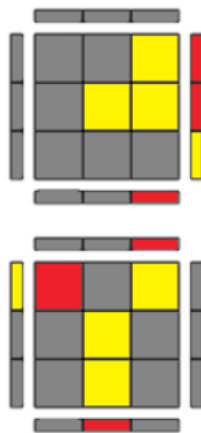
CASES:



QUANTI-K SUN LEFT
 ALGO: L' U2 L U L' U L
 CASES:



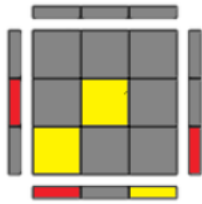
QUANTI-K SUN RIGHT
 ALGO: R U2 R' U' R U' R'
 CASES:



ANTI-QUANTIK ANGLE LEFT

ALGO: L' U2 L U2 L F' L'F

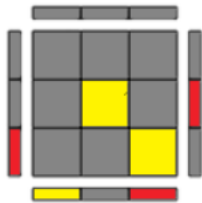
CASES:



ANTI-QUANTIK ANGLE RIGHT

ALGO: R U2 R' U2 R' F R F'

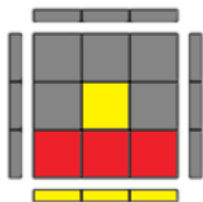
CASES:



INVERSE MEGA CLOCKWISE

ALGO: x' D R F' U F U' R' D' x

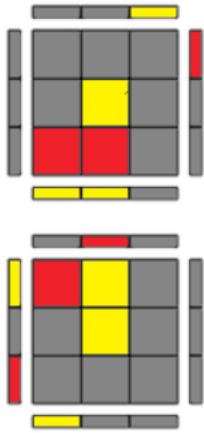
CASES:



QUANTI-K ANGLE ANTI-CLOCKWISE

ALGO: F' L F L' U2 L' U2 L

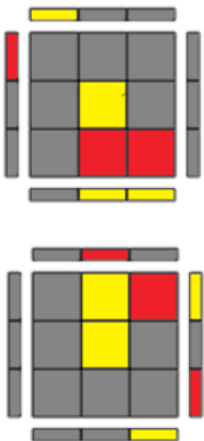
CASES:



QUANTI-K ANGLE CLOCKWISE

ALGO: F R' F' R U2 R U2 R'

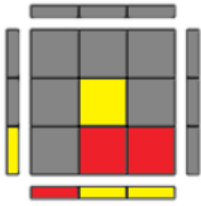
CASES:



QUANTI-K CONSTRUCT ANTI-CLOCKWISE

ALGO: $x' D' L' F U' F U L D F' R F' R' x$

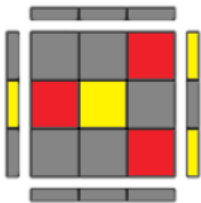
CASES:



QUANTI-K CONSTRUCT CLOCKWISE

ALGO: $x' D R F' U F' U' R' D' F' L' F L x$

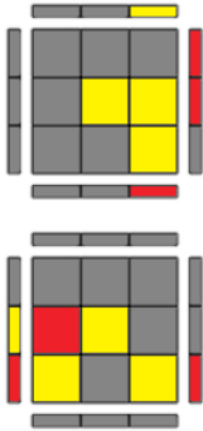
CASES:



SUPER MEGA ANTI-CLOCKWISE

ALGO: $x' D' L' U' F U F' L D x$

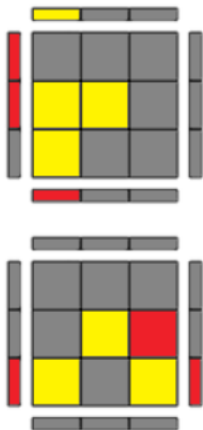
CASES:



SUPER MEGA CLOCKWISE

ALGO: $x' D R U F' U' F' R' D' x$

CASES:



STEP TWO

This step is very difficult.

I'll use all the colors to represent blocks 1x1x3:

red, green, orange, blue.

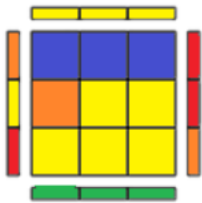
You have to learn how to recognize the cases.

Rare cases are PLL.

P2 LEFT

ALGO: $x' L D F' D' L' U' F^2 D F' U F D' x$

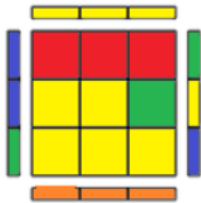
CASE:



P2 RIGHT

ALGO: $x' R' D' F D R U F^2 D' F U' F' D x$

CASE:



PR

ALGO: R2 D R' U2 R D' R' U' R' U' R' F R2 U' R' U' R U
R' F'

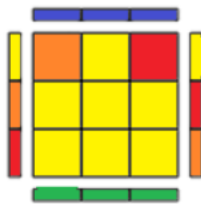
CASE:



ER (OLL24+ U+ T PERM)

ALGO: r U R' U' r' F R F' U R U R' U' R' F R2 U' R' U' R U
R' F'

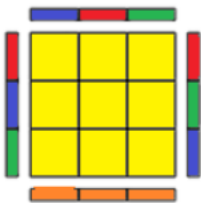
CASE:



F PERM (PLL)

ALGO: R' U R U' R2 F' U' F U R F R' F' R2

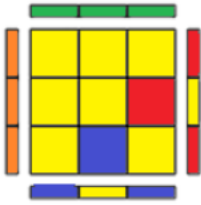
CASE:



2-FLIP ADJACENT (ELL)

ALGO: $x' R U M' F M' F M' F^2 M F M F M F^2 U' R' x$

CASE:



2-FLIP OPPOSITE (ELL)

ALGO: $M' U M' U M' U^2 M U M U M$

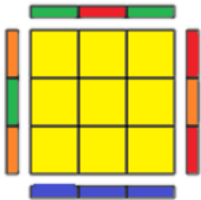
CASE:



Ua PERM (PLL)

ALGO: $M^2 U M' U^2 M U M^2$

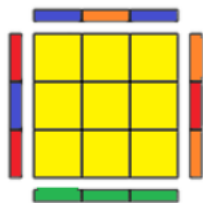
CASE:



U_b PERM (PLL)

ALGO: M² U' M' U² M U' M²

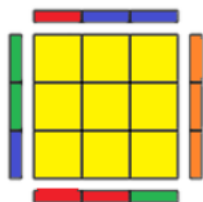
CASE:



J_a PERM (PLL)

ALGO: L' U' L F L' U' L U L F' L² U L

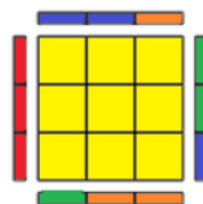
CASE:



J_b PERM (PLL)

ALGO: R U² R' U' R U² L' U R' U' L

CASE:



A14

ALGO: L' U' L U' L' U2 L R U R' U R U2 R'

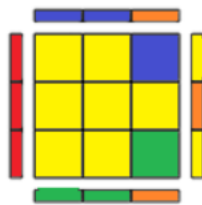
CASE:



E14

ALGO: R U2 R' U' R U' L' R' U2 L U L' U L

CASE:



QU ANTI-CLOCKWISE

ALGO: F' L F L' U' L' U L2 F' L' F U F U' F'



QU CLOCKWISE

ALGO: F R' F' R U R U' R² F R F' U' F' U F

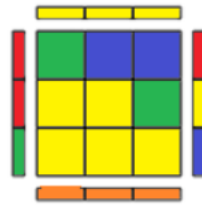
CASE:



A-QU LEFT

ALGO: L' U' L U L F' L' F² U F' U' F' L F L'

CASE:



A-QU RIGHT

ALGO: R U R' U' R' F R F² U' F U F R' F' R

CASE:



K LEFT

ALGO: M L' U² L U L' U² R U' L U R' M'

CASE:



K RIGHT

ALGO: M R U² R' U' R U² L' U R' U' L M'

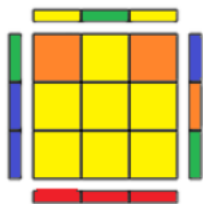
CASE:



S2E LEFT

ALGO: x' M' F' M F² M' F' M L D F' D' L' U' F² D F' U F D' x

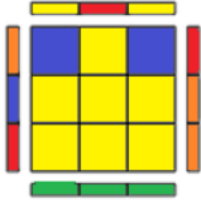
CASE:



S2E RIGHT

ALGO: x' M' F M F2 M' F M R' D' F D R U F2 D' F U' F' D x

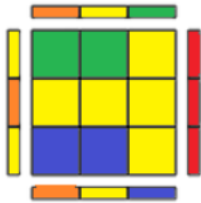
CASE:



DD2

ALGO: R U R2 F R' F2 U F L' U' L2 F' L' F2 U' F'

CASE:



TR

ALGO: R U R' U' R' F R F' U' R' U2 R U2 R' F R U R' U'
R' F' R2

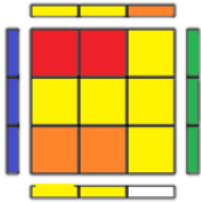
CASE:



T0

ALGO: R U R' U' R' F R F' U R U² R' U' R U² L' U R' U'
L

CASE:



T2

ALGO: x' R F² R' F' R F² L' F R' F' U' R U R L F' R' F R x

CASE:



I-23 RIGHT

ALGO: R' F' L F R L' U' L' U' L U L' U² R U' L U R'

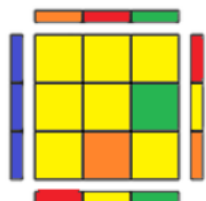
CASE:



I-23 LEFT

ALGO: L F R' F' L' R U R U R' U' R U² L' U R' U' L

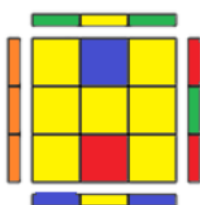
CASE:



S2 RIGHT

ALGO: R U R' U' M' U R U' r'

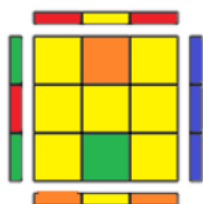
CASE:



S2 LEFT

ALGO: L' U' L U M' U' L' U l

CASE:



S3 RIGHT

ALGO: $x' R' D' L' F^2 L D R U F^2 U' x$

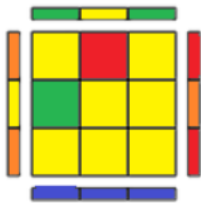
CASE:



S3 LEFT

ALGO:

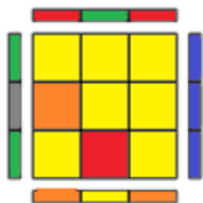
CASE:



SQ RIGHT

ALGO: $R' F' L F R L' U' L' U L$

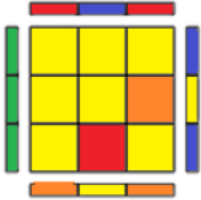
CASE:



SQ LEFT

ALGO: L F R' F' R L' U R U' R'

CASE:



Q14 LEFT

ALGO: x' L D L' U L D' L2 U' L F L F' L' x

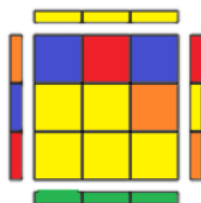
CASE:



Q14 RIGHT

ALGO: x' R' D' R U' R' D R2 U R' F' R' F R x

CASE:



A-Q14 ANTI-CLOCKWISE

ALGO: :F' U' F U F R' F2 L' F R F' L F

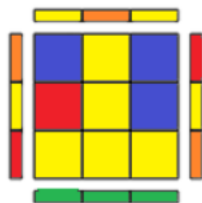
CASE:



A-Q14 CLOCKWISE

ALGO: F U F' U' F' L F2 R F' L' F R' F'

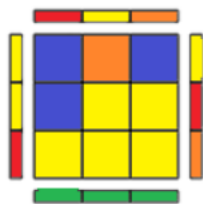
CASE:



QMA ANTI-CLOCKWISE

ALGO: x' U L' U' R U L U' L' R' U L U' F2 U' F2 U x

CASE:



QMA CLOCKWISE

ALGO: $x' U' R U L' U' R' U R L U' R' U F^2 U F^2 U' x$

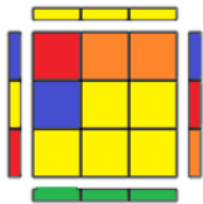
CASE:



A-QMA CLOCKWISE

ALGO: $F U^2 F' U^2 F' L F R' L' F' L F R F' L' F$

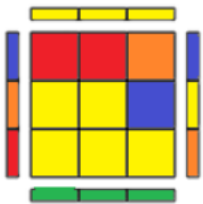
CASE:



A-QMA ANTI-CLOCKWISE

ALGO: $F' U^2 F U^2 F R' F' L R F R' F' L' F R F'$

CASE:



QXT ANTI-CLOCKWISE

ALGO: F' L F L' U' L' U² R U' L U R² F R F' U' F' U F

CASE:



QXT CLOCKWISE

ALGO: F R' F' R U R U² L' U R' U' L² F' L' F U F U' F'

CASE:



A-QXT LEFT

ALGO: x' :L F L' F' L' U L U² F D F' U F² D' F' D' L D L' x

CASE:



A-QXT RIGHT

ALGO: $x' R' F' R F R U' R' U^2 F' D' F U' F^2 D F D R' D' R x$

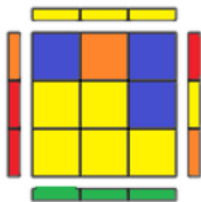
CASE:



P23 CLOCKWISE

ALGO: $x' U L' U' L F L F' L^2 U L U' F' U' F U R U' R' U F U F' U' x$

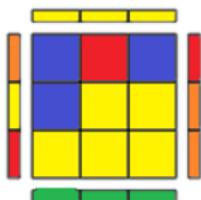
CASE:



P23 ANTI-CLOCKWISE

ALGO: $x' U' R U R' F' R' F R^2 U' R' U F U F' U' L' U L U' F' U' F U x$

CASE:



LU LEFT

ALGO: L F R U' R' U² F' U' R L' U R' U' R' F R F'

CASE:



LU RIGHT

ALGO: R' F' L' U L U² F U L' R U' L U L F' L' F'

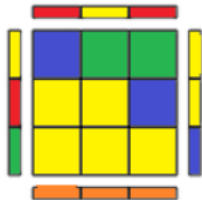
CASE:



H22 LEFT

ALGO: x' L' F' R F R' F' L F R F' R' L' F L U' R U R' F' R' F R x

CASE:



H22 RIGHT

ALGO: $x' R F L' F' L F R' F' L' F L R F' R' U L' U' L F L F' L' x$

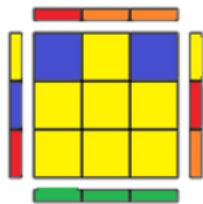
CASE:



QE LEFT

ALGO: $L F' L' U' F' U F U' R' L F^2 L' R F' L F L' U' L' U L$

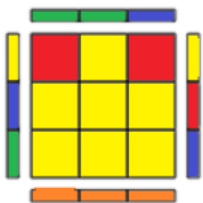
CASE:



QE RIGHT

ALGO: $R' F R U F U' F' U L R' F^2 R L' F R' F' R U R U' R'$

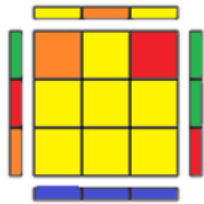
CASE:



MIX RIGHT

ALGO: $x' F' R' D R D' F' D' F D R U F U' F' R^2 F L F' R F L' x$

CASE:



MIX LEFT

ALGO: $x' F L D' L' D F D F' D' L' U' F' U F L^2 F' L' F L' F' R x$

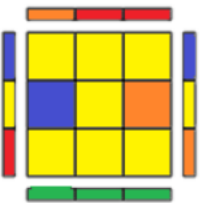
CASE:



H LEFT:

ALGO: $x' L F L' F U' R' D' F^2 D R F D F' U F D' x$

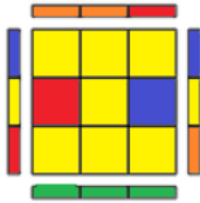
CASE:



H RIGHT

ALGO: $x' R' F' R F' U L D F^2 D' L' F' D' F U' F' D x$

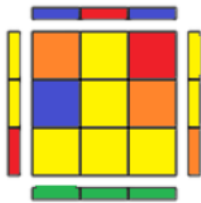
CASE:



AH5 LEFT

ALGO: $x' L F L' F' L' F' L F L F' L' F' L' F L U F U' F' U' R U R' x$

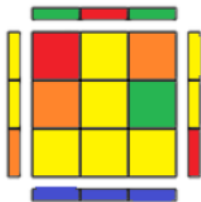
CASE:



AH5 RIGHT

ALGO: $x' :R' F' R F R F R' F' R' F R F R F' R' U' F' U F U L' U' L x$

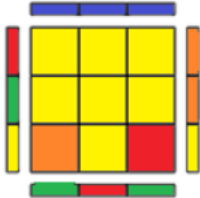
CASE:



LE RIGHT

ALGO: R U2 R' U' R' F R F2 U F L F' L' F U F U' F'

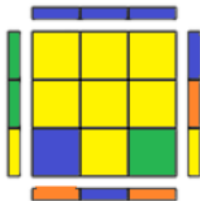
CASE:



LE LEFT

ALGO: L' U2 L U L F' L' F2 U' F' R' F R F' U' F' U F

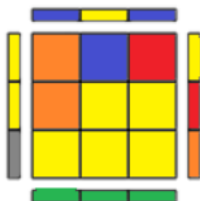
CASE:



A-11 CLOCKWISE

ALGO: x' U F U2 R U R' F R U' R' U L' U' R' F R F' U L x

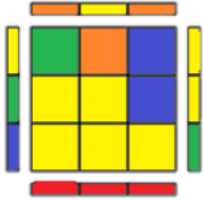
CASE:



A-11 ANTI-CLOCKWISE

ALGO: x' U' F' U² L' U' L F' L' U L U' R U L F' L' F U' R' x

CASE:



S2A LEFT

ALGO: l' U' L U M U' L' U' L U L' U² R U' L U' R'

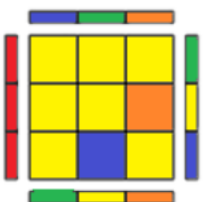
CASE:



S2A RIGHT

ALGO: r U R' U' M U R U R' U' R U² L' U R' U' L

CASE:



QUU RIGHT

ALGO: R U R' U R U2 L' R' U2 L U' L' U' L2 F' L F2 U' F'

CASE:



QUU LEFT

ALGO: L' U' L U' L' U2 L R U R' U R U' R2 F R' F2 U F

CASE:



PR4 RIGHT

ALGO: R U R2 F R' F2 U F U L' U2 L U L' U R L U2 R'
U' R U' R

CASE:



PR4 LEFT

ALGO: L' U' L2 F' L F2 U' F' U' R U2 R' U' R U' L' R' U2
L U L' U L

CASE:



T4

ALGO: x' D' L' U' F U L D R M' F M F2 M' F M R' D' F D R U F2 D' F
U' F' D x

CASE:



CONCLUSION

I created this method since 2008, It was difficult create the guide.