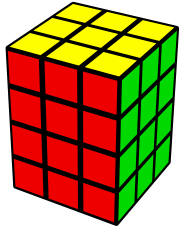


Cuboids 3x3xn, no R/L/F/B moves: inserts & swaps, parities and PLL

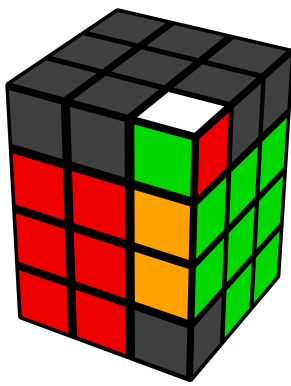
Ricardo Carvalho (feb-2021)



Put nxn face on U/D face.
/ denotes R2.

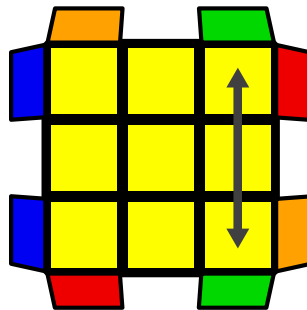
inserts & swaps:

insert FR corner/edge



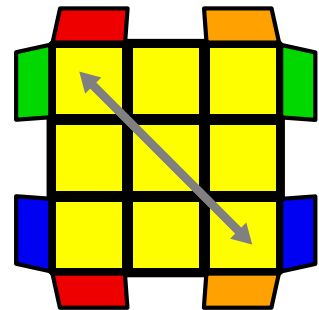
I
/U/U/
R2 U R2 U' R2

swap adjacent FR-BR
corners



I
/U/U'/U'D/U'/U/D'
R2 U R2 U' R2 U' D R2 U'
R2 U R2 D'

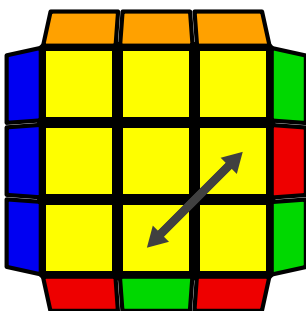
swap diagonal FR-BL
corners



Y
/D'/U/U'/D/U'/U/U/
R2 D' R2 U R2 U' R2 D R2
U' R2 U R2 U R2

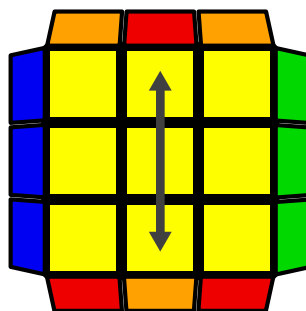
parities:

adjacent F-R edges



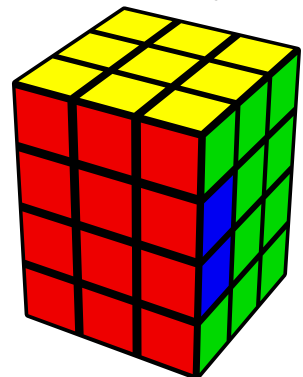
Pa
(/U/U) (/U2/U2) (/U/U') /
(R2 U R2 U) (R2 U2 R2
U2) (R2 U R2 U') R2

opposite F-B edges



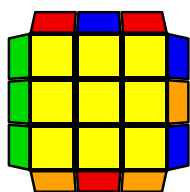
Po
/U2 /U2 /U2
R2 U2 R2 U2 R2 U2

middle layer flip



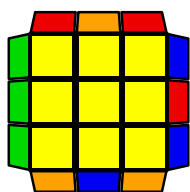
Pm
u2 / F2 u2 U2 F2 / u2
(u2 R2) (F2 u2 U2 F2) (R2
u2)

PLL:



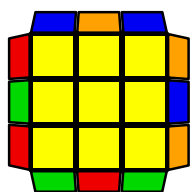
U+

$(/U'/U'/U2/U2)2$
(R2 U' R2 U' R2 U2 R2 U2)2



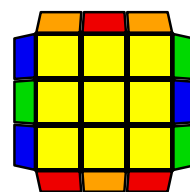
U-

$(/U/U/U2/U2)2$
(R2 U R2 U R2 U2 R2 U2)2



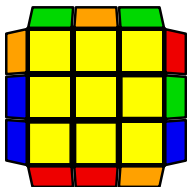
Z

$(/U'/U2/U'/U)2$
(R2 U' R2 U2 R2 U' R2 U)2



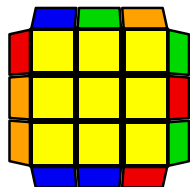
H

$/U2/U2/U'/U2/U2/U'$
(R2 U2 R2 U2) R2 U' (R2 U2 R2 U2) R2 U'



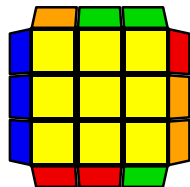
A+

$/U/U/D'/D/U'/D'/U'D'/$
R2 U R2 U R2 D' R2 D R2 U'
R2 D' R2 U'D R2



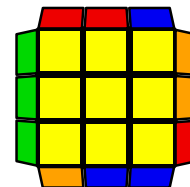
A-

$/U/U'/U/D/U'/U/U'D'/$
R2 U R2 U' R2 U R2 D R2 U'
R2 U R2 U'D' R2



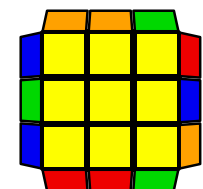
J

$/U'/D/U'/U/UD'/U$
R2 U' R2 D R2 U' R2 U R2
UD' R2 U



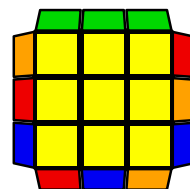
L

$/U/D'/U/U'/U'D'/U'$
R2 U R2 D' R2 U R2 U' R2
U'D R2 U'



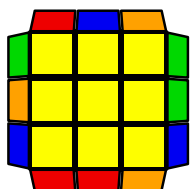
I

$/U/U'/U'D'/U'/U/D'$
R2 U R2 U' R2 U'D R2 U' R2
U R2 D'



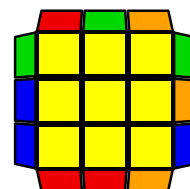
E

$/U/U'/U/U'y'/U2D'/UD/U/U'$
R2 U R2 U' R2 U R2 U' y' R2
U2D' R2 UD R2 U R2 U'



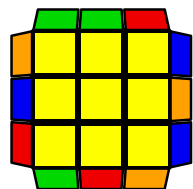
Y

$/D'/U/U'/D/U'/U/U/$
R2 D' R2 U R2 U' R2 D R2 U'
R2 U R2 U R2



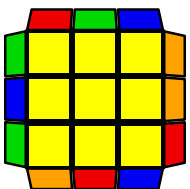
V

$/U'/U2F2U/U/U2F2U/U2/U$
R2 U' R2 U2F2U R2 U R2
U2F2U R2 U2 R2 U



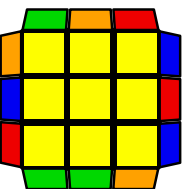
Ga

$/U2/U'/U'/U2/y'/U2/U/U/U$
R2 U2 R2 U' R2 U' R2 U2 y'
R2 U2 R2 U R2 U R2 U



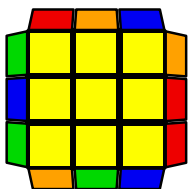
Gb

$/U'/U'/U2/U2/y/U/U/U2/U'$
R2 U' R2 U' R2 U2 R2 U2 y
R2 U R2 U R2 U2 R2 U'



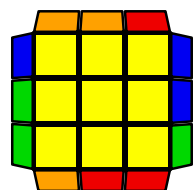
Gc

$/U2/U/U/U2/y/U2/U'/U'/U'$
R2 U2 R2 U R2 U R2 U2 y
R2 U2 R2 U' R2 U' R2 U'



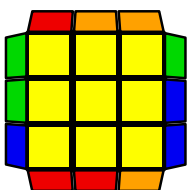
Gd

$/U/U/U2/U2/y'/U'/U'/U2/U$
R2 U R2 U R2 U2 R2 U2 y'
R2 U' R2 U' R2 U2 R2 U



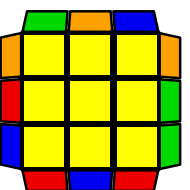
Na

$(/D'/UD/U'/U2)2$
(R2 D' R2 UD R2 U' R2 U2)2



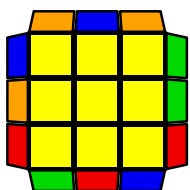
Nb

$(/U'/UD/D'/U2)2$
(R2 U' R2 UD R2 D' R2 U2)2



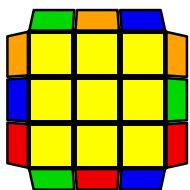
Ra

$/U'/U'/U/y/U2/U'/U'/U'/F2/U$
R2 U' R2 U' R2 U y R2 U2
(R2 U')3 F2 U



Rb

$/U/U/U'y'/U2/U/U/U/B2/U'$
R2 U R2 U R2 U' y' R2 U2
(R2 U)3 B2 U'



E

$/U2/U'/UD/U'/U/U'D'/U'/$
R2 U2 R2 U' R2 UD R2 U' R2 U R2 U'D' R2 U' R2