

1.标准情况

A1 $U R U' R'$	A2 $y' \underline{U}' (R' U R)$	A3 $(R U R')$	A4 $y' (R' \underline{U}' R)$
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2.层先发的两个基本公式

B1 $(U R \underline{U}' R' \underline{U}') y' (R' U R)$	B2 $y \underline{U}' (L' U L U y') (R \underline{U}' R')$
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3.角块在底面，底面颜色朝侧面的4中情况

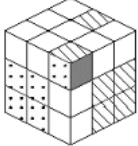
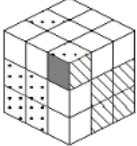
C1 $(R U' R' U)(R U' R')$	C2 $(R U R' \underline{U}') (R U R')$	C3 $y' (R' U)(R \underline{U}')(R' U R)$	C4 $y' (R' \underline{U}' R U)(R' \underline{U}' R)$
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4.角块在顶面，且棱块在第二层的6种情况

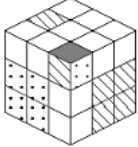
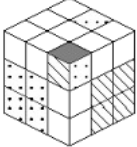
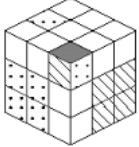
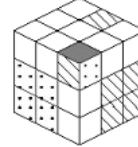
D1 $\underline{U}' (R \underline{U}') (R' U^2) (R U' R')$	D2 $U' (R U \underline{U}' R' U) (R U R')$	D3 $d (R' U' R) d' (R U R')$	D4 $\underline{U}' (R U R') d (R' \underline{U}' R)$
D5 $(R \underline{U}' R') y' (R' U^2 R)$	D6 $(R U R' \underline{U}')^2 (R U R')$		

5.角块在顶层，底面颜色朝侧面，且棱块也在顶层，与角块不相邻的6种情况

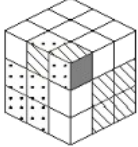
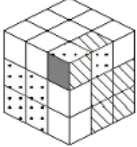
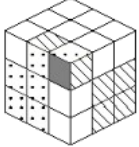
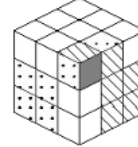
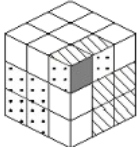
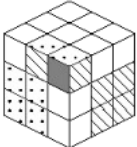
E1 $(d R' \underline{U}' R U \underline{U}') (R' U R)$	E2 $U' (R U R' U') (R U \underline{U}' R')$	E3 $(d R' \underline{U}' R U') (R' \underline{U}' R)$	E4 $\underline{U}' (R U R' U) (R U R')$
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 E5 $d (R' U^2)(R \underline{U'U'})(R' U$ $R)$	 E6 $U' (R \underline{U'U'})(R' U^2)(R U$ $R')$
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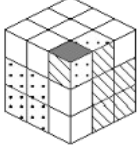
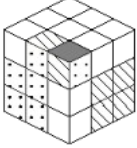
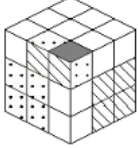
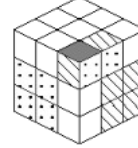
6. 角块在顶层，底面颜色朝顶面，且棱块也在顶层，与角块不相邻的 4 种情况

 F1 $y' \underline{U'}(R' U^2)(R \underline{U'} R' U)R$	 F2 $U(R \underline{U'U'})(R' U R U')R'$	 F3 $(R U' R' U^2)(R U R')$	 F4 $y'(R' U R \underline{U'U'})(R' \underline{U'} R)$
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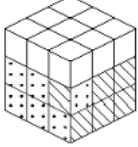
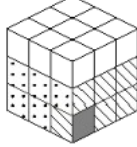
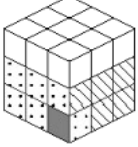
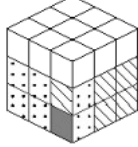
7.角块和棱块都在顶层并相邻，且底面颜色朝侧面的 6 种情况

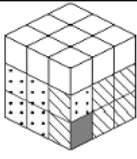
 G1 $(R' U^2)(R^2 U)(R^2 U R)$	 G2 $U'(R \underline{U'U'} R' d)(R' U R)$	 G3 $d (R' U R U')(R' \underline{U'} R)$	 G4 $\underline{U'} (R \underline{U'} R' U)(R U R')$
 G5 $(R U' R' U)(d R' \underline{U'} R)$	 G6 $y' (R' U)(R d' \underline{U'})(R U$ $R')$		

8. 角块和棱块都在顶层并相邻，且底面颜色朝顶面的 4 种情况

 H1 $(R \underline{U'U'})(R' \underline{U'} R U)R'$	 H2 $y' (R' U^2)(R U R' \underline{U'})R$	 H3 $(R U R')U^2(R U R' \underline{U'})$ $(R U R')$	 H4 $y' (U^2 R^2 U^2)(R U R' U$ $R^2)$
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9.角块在底层，棱块在第二层的 5 种情况

 I1 $(R \underline{U'U'} R' U)^2 y'(R'$	 I2 $(RU'R'U)(R \underline{U'U'})$	 I3 $(R U R' U')(R \underline{U'U'})$	 I4 $(R U' R U)y(R U' R'$
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$\underline{U}' R)$	$R'U)(RU'R')$	$R' U')(R U R')$	$F2)$
 15 $R2y(R U R' \underline{U}')y'(R' U R')$			

另注：

①对于 D6，我个人习惯于 3 次 FSC 的转发，既 $(R U R' \underline{U}')$ 3,感觉很顺手

②对于 I1 这种情况，我个人采用另一个转发，既 $F2 U2 R' F2 R U2 F U' F$ ，一直用的这个，也已经用习惯了