

Algorithm Templates

Template	Piece Type	Cycle Type
$X Y X' Y' Z Y Z'$	Midge	3-cycle
$[R, B' U B L' U']$	Corner	5-cycle
$[X, Y Z P Q]$	Edge	5-cycle
$[NR, U R L U']$	Edge	5-cycle
$X Y X' Y' Z X_s' Y_s' X_s Y_s Z_s'$	Corner-Center	5-cycle
$U L' NU NR' NU' L NU' NR U' NU$	Corner-Center	5-cycle
$F' L' NU' NL_2 NU L NU NL_2 NU' F$	Corner-Center	5-cycle
$B NF NL NF' L' R' NF' NL' NF L R B'$	Corner-Center	5-cycle
$F_2 NF' NR NF R' L' NF NR' NF' R L F_2$	Corner-Center	5-cycle
$(X Y Z) (NL NF NU_2 NF' D NF' NU_2 NF D' NL') (Z' Y' X')$	Corner-Center	5-cycle
$(X Y) (NR B NF U NR NU_2 NR' U' NR' NU_2 NR B' NF' NR') (Y' X')$	Corner-Center	5-cycle
$(X Y) (NL U ND B NR' NF_2 NR B' NR NF_2 NR' U' ND' NL') (Y' X')$	Corner-Center	5-cycle
$(X Y) (NU' NR NB NU' B' NU B NB' NR' B' NU' B NU_2) (Y' X')$	Corner-Center	5-cycle
$(X Y) (L NU NL NU' U NF NU' NF' U' NU NL' L') (Y' X')$	Corner-Center	5-cycle
$(X Y) (B_2 NU B_2 NL U_2 NL B_2 NU' B_2 NL' U_2 NL') (Y' X')$	Corner-Center	5-cycle
$(X Y) (L_2 NU NL NU' U NF NU' NF' U' NU NL' L_2) (Y' X')$	Corner-Center	5-cycle
$[NR, U NU' NB' U']$	Corner-Center	7-cycle
$[X, Y Z P Z_0]$	Corner-Center	11-cycle
$[X Y, Z P Q A]$	Corner-Center	15-cycle
$[X Y, Z P Q]$	Corner-Center	17-cycle
$[X Y, Z P Q A]$	Corner-Center	23-cycle
$[NR NL', NF R' NB' ND]$	Corner-Center	23-cycle
$[X NL, Y Z P Q]$	Corner-Center	23-cycle
$[X NL', Y Z P Q]$	Corner-Center	23-cycle
$NR NL NU R NB ND' NL' NR' ND NB' R' NU'$	Corner-Center	23-cycle
$NR NL NU R' NF ND' NL' NR' ND NF' R NU'$	Corner-Center	23-cycle
$NR NL NU NF' L ND' NL' NR' ND L' NF NU'$	Corner-Center	23-cycle
$NR NL NU L NF ND' NL' NR' ND NF' L' NU'$	Corner-Center	23-cycle
$NR NL' NU R ND' NB NL NR' NB' ND R' NU'$	Corner-Center	23-cycle
$NR NL' NU R NB ND' NL NR' ND NB' R' NU'$	Corner-Center	23-cycle
$NR NL' NU R' NF ND' NL NR' ND NF' R NU'$	Corner-Center	23-cycle
$NR NL' NU R' ND' NF NL NR' NF' ND R NU'$	Corner-Center	23-cycle

Template	Piece Type	Cycle Type
NR NL' NU NF' R NB NL NR' NB' R' NF NU'	Corner-Center	23-cycle
NR NL' NU NF' L' NB NL NR' NB' L NF NU'	Corner-Center	23-cycle
NR NL' NU' R NB' ND NL NR' ND' NB R' NU	Corner-Center	23-cycle
NR NL' NU' R' NF' ND NL NR' ND' NF R NU	Corner-Center	23-cycle
NR NL NU R2 NF ND' NL' NR' ND NF' R2 NU'	Corner-Center	23-cycle
NR NL NU R2 ND NF NL' NR' NF' ND' R2 NU'	Corner-Center	23-cycle
NR NL NU R2 ND NF' NL' NR' NF ND' R2 NU'	Corner-Center	23-cycle
NR NL NU R2 ND NB NL' NR' NB' ND' R2 NU'	Corner-Center	23-cycle
NR NL NU R2 ND NB' NL' NR' NB ND' R2 NU'	Corner-Center	23-cycle
NR NL NU R2 NB ND' NL' NR' ND NB' R2 NU'	Corner-Center	23-cycle
NR NL NU NF R2 NB NL' NR' NB' R2 NF' NU'	Corner-Center	23-cycle
NR NL NU NF' L2 ND' NL' NR' ND L2 NF NU'	Corner-Center	23-cycle
NR NL NU NF' L2 NB' NL' NR' NB L2 NF NU'	Corner-Center	23-cycle
NR NL NU L2 NF ND' NL' NR' ND NF' L2 NU'	Corner-Center	23-cycle
NR NL NU L2 ND NB NL' NR' NB' ND' L2 NU'	Corner-Center	23-cycle
NR NL NU L2 ND NB' NL' NR' NB ND' L2 NU'	Corner-Center	23-cycle
NR NL' NU R2 NF ND' NL NR' ND NF' R2 NU'	Corner-Center	23-cycle
NR NL' NU R2 ND NF NL NR' NF' ND' R2 NU'	Corner-Center	23-cycle
NR NL' NU R2 ND NB NL NR' NB' ND' R2 NU'	Corner-Center	23-cycle
NR NL' NU R2 NB ND' NL NR' ND NB' R2 NU'	Corner-Center	23-cycle
NR NL' NU NF R2 NB NL NR' NB' R2 NF' NU'	Corner-Center	23-cycle
NR NL' NU NF L2 NB NL NR' NB' L2 NF' NU'	Corner-Center	23-cycle
NR NL' NU' R2 NF' ND NL NR' ND' NF R2 NU	Corner-Center	23-cycle
NR NL' NU' R2 NB' ND NL NR' ND' NB R2 NU	Corner-Center	23-cycle
]R NU', NF' NR2 NL2 NU NF[	Corner-Center	23-cycle
]R NU', NF' NL2 NR2 NU NF[	Corner-Center	23-cycle
]R NU', NF NR2 NL2 NU NF'[	Corner-Center	23-cycle
]R NU', NF NL2 NR2 NU NF'[	Corner-Center	23-cycle
]R NU, NF NR2 NL2 NU _i NF'[	Corner-Center	23-cycle
[X Y' X', F' ND' F]	Corner-Center	2 2-cycles
X Y2 X Y' Z Y X P X Y' Z Y Q P Y2 Q'	Corner	2 3-cycles
R2 U B2 U' B2 R2 B2 U B2 U'	Midge	2 3-cycles
MR2 U R L U' MR2 U L' R' U'	Midge	2 3-cycles
MR2 U R' L' U' MR2 U L R U'	Midge	2 3-cycles
R L U MR2 U' R' L' U MR2 U'	Midge	2 3-cycles
R U MF2 U' MF2 R' MF2 U MF2 U'	Midge	2 3-cycles
R U' MF2 U MF2 R' MF2 U' MF2 U	Midge	2 3-cycles
MR2 U R L2 U' MR2 U L2 R' U'	Midge	2 3-cycles
MR2 U R' L2 U' MR2 U L2 R U'	Midge	2 3-cycles
MR2 U R2 L U' MR2 U L' R2 U'	Midge	2 3-cycles
MR2 U R2 L' U' MR2 U L R2 U'	Midge	2 3-cycles
R L2 U MR2 U' R' L2 U MR2 U'	Midge	2 3-cycles
R2 L U MR2 U' R2 L' U MR2 U'	Midge	2 3-cycles
MR2 U R2 L2 U' MR2 U L2 R2 U'	Midge	2 3-cycles
MR2 U F2 B2 U' MR2 U B2 F2 U'	Midge	2 3-cycles

Template	Piece Type	Cycle Type
R2 L2 U MR2 U' R2 L2 U MR2 U'	Midge	2 3-cycles
R2 L2 U MF2 U' R2 L2 U MF2 U'	Midge	2 3-cycles
R2 F MU2 F' R2 L2 F MU2 F' L2	Midge	2 3-cycles
R2 D MR2 D' R2 L2 D MR2 D' L2	Midge	2 3-cycles
R U2 MF2 U2 MF2 R' U2 MF2 U2 MF2	Midge	2 3-cycles
R MU2 F2 MU2 F2 R' MU2 F2 MU2 F2	Midge	2 3-cycles
MR2 U2 F U2 MR2 U2 MR2 F' MR2 U2	Midge	2 3-cycles
NF ND NF' ND'	Corner-Center	2 3-cycles
[X, Y] [Z, P Q]	Corner-Center	2 3-cycles
[R, NU] [NL, NU R]	Corner-Center	2 3-cycles
NR NU NR' NU'	Corner-Center	2 3-cycles
NR NU' NR' NU	Corner-Center	2 3-cycles
NR NU2 NR' NU2	Corner-Center	2 3-cycles
NR2 NU2 NR2 NU2	Corner-Center	2 3-cycles
R' D2 R B' U2 B R' D2 R B' U2 B	Corner-Center	2 3-cycles
!F' L2 F D' R2 D F' L2 F D' R2 D	Corner-Center	2 3-cycles
!U' B2 U L' F2 L U' B2 U L' F2 L	Corner-Center	2 3-cycles
!L U2 L' F D2 F' L U2 L' F D2 F'	Corner-Center	2 3-cycles
!B R2 B' U L2 U' B R2 B' U L2 U'	Corner-Center	2 3-cycles
!D F2 D' R B2 R' D F2 D' R B2 R'	Corner-Center	2 3-cycles
[X, Y]	True Center	2 3-cycles
X Y X Y	True Center	2 3-cycles
X Y X' Z P Z'	True Center	2 3-cycles
X Y Z P X' Y'	True Center	2 3-cycles
[X, Y Z]	True Center	2 3-cycles
[X, Y Z]	True Center	2 3-cycles
X Y Z X Y Z	True Center	2 3-cycles
X Y X Y X Y	True Center	2 3-cycles
[X, Y Z P]	True Center	2 3-cycles
[X, Y Z P]	True Center	2 3-cycles
[X Y, Z P]	True Center	2 3-cycles
[X Y, Z P]	True Center	2 3-cycles
[X, Y] [Z, P]	True Center	2 3-cycles
X Y Z P X Y Z P	True Center	2 3-cycles
X Y X Y X Y X Y	True Center	2 3-cycles
MR MU MR' MU'	True Center	2 3-cycles
MR MU MR' MF2 MU' MF2	True Center	2 3-cycles
MR MU' MR' MF2 MU MF2	True Center	2 3-cycles
MR MF MR' MU2 MF' MU2	True Center	2 3-cycles
MR MU2 MF' MR' MU2 MF	True Center	2 3-cycles
MR2 MU MF' MR2 MU' MF	True Center	2 3-cycles

Template	Piece Type	Cycle Type
MR MU MR MU MR' MU' MR' MU'	True Center	2 3-cycles
MR MU MR MU' MR' MU' MR' MU	True Center	2 3-cycles
MR MU MR' MU MR' MU' MR MU'	True Center	2 3-cycles
MR MF MR' MF' MR' MF' MR MF	True Center	2 3-cycles
MR MF MR MF MR' MF' MR' MF'	True Center	2 3-cycles
MR MF MR MF' MR' MF' MR' MF	True Center	2 3-cycles
MR MF MR' MF MR' MF' MR MF'	True Center	2 3-cycles
MR MF MU MR' MF' MR' MU' MR	True Center	2 3-cycles
X P' Q' Y Z P Z' Y' X' Z P' Z' Q P	Corner	2-cycle, 4-cycle
[X, Y Z Y'] [P, Q A Q']	Corner	3-cycle, 3-cycle
[X, Y Z Y'] [P Q P', A]	Corner	3-cycle, 3-cycle
[X, Y Z Y'] [P, Q A Q']	Midge	3-cycle, 3-cycle
[X, Y Z Y'] [P Q P', A]	Midge	3-cycle, 3-cycle
(X Y Z P Q) (NU R NB ND' NR NL ND NB' R' NU' NL' NR') (Q' P' Z' Y' X') (NR NL NU R NB ND' NL' NR' ND NB' R' NU')		23-cycle/5-cycle
[X, Y Z P]	Corner-Center	even-parity cycles
R U2 R' B D2 B' R U2 R' B D2 B'	Twisted Corner	
R F2 R' U B2 U' R F2 R' U B2 U'	Twisted Corner	
[X Y Z P Q, A G H]	Twisted Corner	
[X Y X', Z P Z']	Twisted Corner	
[R' L, D2 U' F' L D U2 F']	Hardest distance-20 position	