## Elemental Neon



Designed and sold by David Litwin, 2012.
(laser cut plastic and stainless steel screws, $5.5^{\prime \prime}$ tip to tip, $3 / 4^{\prime \prime}$ thick)
This puzzle is beautifully custom made from layers of laser cut plastic. A middle plunger that moves horizontally is crossed by left and right plungers that form an X. The plungers can be moved to rearrange the gold tiles in the center that contain a circle pattern. Here is an example sequence of moves (that corresponds to a left rotation shown on the following page):


As shown below, moving the plunger in the wrong direction leaves the puzzle "locked" so that that plunger must be moved back to where it was. However, as shown on the following page, in any of the three orientations, there are three rotation sequences, each with a clockwise and counterclockwise version, that can be used to mix up the tiles, and then restore the circle pattern. A fun puzzle that is harder than it looks at first.


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## Elemental Neon Move Sequences

Left Rotation Sequences:
Left: Rotate (1,2), (3,4), (X,Y) clockwise; that is:
Move middle RIGHT, right UP, middle LEFT, right DOWN.
Left CC: Rotate (1,2), (3,4), (X,Y) counterclockwise; that is:
Move right UP, middle RIGHT, right DOWN, middle LEFT.

## Right Rotation Sequences:

Right: Rotate (2,3), (4,5), (Y,Z) clockwise; that is:
Move left UP, middle LEFT, left DOWN, middle RIGHT.
Right CC: Rotate $(2,3),(4,5),(Y, Z)$ counterclockwise; that is: Move middle LEFT, left UP, middle RIGHT, left DOWN.

## Center Rotation Sequences:

Center: Rotate A,B,3 and rotate 2,4,Y clockwise; that is:
Move right DOWN, left DOWN, right UP, left UP
Center CC: Rotate A,B,3 and rotate 2,4,Y counterclockwise; that is:
Move left DOWN, right DOWN, left UP, right UP.

| Left | $\left\|\begin{array}{llll}  & A & & B \\ 1 & 2 & 3 & 4 \\ 1 & 5 \\ & X & Y & Z \end{array}\right\|$ | $\rightarrow$ | $\begin{array}{llllll} \mathrm{A} & & \mathrm{~B} & & & \\ & 1 & 2 & 3 & 4 & 5 \\ \mathrm{X} & \mathrm{Y} & \mathrm{Z} & & & \end{array}$ | $\rightarrow$ |  | $\rightarrow$ |  | $\rightarrow$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Left CC | $\left\lvert\, \begin{array}{lllll} & \\ & \\ 1 & & & & B \\ 1 & 3 & 4 & 5 \\ & \text { X } & \mathrm{Y} & \mathrm{Z} & \end{array}\right.$ | $\rightarrow$ |  | $\rightarrow$ | $\begin{array}{\|llllll} \hline & & & B & & \\ A & & 3 & 4 & & \\ & 1 & 2 & X & Y & \\ & & & & & \\ & & & & \\ \hline \end{array}$ | $\rightarrow$ | $$ | $\rightarrow$ | $\begin{array}{lll}  & A & B \\ 3 & 4 & \mathrm{X} \\ & \mathrm{Y} & \\ & 1 & 2 \end{array}$ |
| Right | $\left\|\begin{array}{llll} \mathrm{A} & & \mathrm{~B} \\ 1 & 2 & 3 & 4 \\ 1 & \mathrm{X} & \mathrm{Y} & \mathrm{Z} \end{array}\right\|$ | $\rightarrow$ | $\begin{array}{lllll} A & & & \\ 2 & 3 & & B & \\ 1 & \mathrm{Y} & \mathrm{Z} & 4 & 5 \end{array}$ | $\rightarrow$ | $\begin{array}{llllll}  & & A & & & \\ & & 2 & 3 & & B \\ 1 & \mathrm{Y} & \mathrm{Z} & 4 & 5 & \\ & & & & & \\ & & & & \end{array}$ | $\rightarrow$ |  | $\rightarrow$ | $\begin{array}{lllll}\text { A } & & B \\ 1 & \mathrm{Y} & \mathrm{Z} & 2 & 3 \\ \mathrm{X} & 4 & 5\end{array}$ |
| $\begin{gathered} \text { Right } \\ \text { CC } \end{gathered}$ | $\left\lvert\, \begin{array}{lllll} & \\ 1 & & & B \\ 1 & 2 & 3 & 4 & 5 \\ & X & \mathrm{Y} & \mathrm{Z} & \end{array}\right.$ | $\rightarrow$ | $\begin{array}{lllllll} & & & & A & & \\ 1 & 2 & 3 & 4 & 5 & \\ & & & X & Y & \\ & & & & & & \end{array}$ | $\rightarrow$ |       <br>   4 5   <br>   2 3 Y Z <br>       <br>     X  <br>       <br>       | $\rightarrow$ | $\begin{array}{lllll} \hline A & & & & \\ 4 & 5 & & B & \\ 1 & 2 & 3 & \mathrm{Y} & \mathrm{Z} \\ & \mathrm{X} & & & \end{array}$ | $\rightarrow$ |  |
| Center | $\left\lvert\, \begin{array}{lllll} & A & & B \\ 1 & 2 & 3 & 4 & 5 \\ & X & \mathrm{Y} & \mathrm{Z} & \end{array}\right.$ | $\rightarrow$ | $\begin{array}{lllll}  & A & & \\ 1 & 2 & B & & 5 \\ & 3 & 4 & Z & \\ X & \mathrm{Y} & & & \\ \hline \end{array}$ | $\rightarrow$ | $\begin{array}{lllll} 1 & & A & & 5 \\ & 3 & 2 & B & \\ \mathrm{X} & \mathrm{y} & & 4 & \mathrm{Z} \end{array}$ | $\rightarrow$ | $\begin{array}{llll}  & & A & \\ & 3 & 2 & 5 \\ & & \mathrm{Y} & \mathrm{~B} \\ & 4 & \mathrm{Z} \end{array}$ | $\rightarrow$ |  |
| $\left\lvert\, \begin{gathered} \text { Center } \\ \text { CC } \end{gathered}\right.$ | $\left\lvert\, \begin{array}{llllll} & A & & B \\ 1 & 2 & 3 & 4 & 5 \\ & X & \mathrm{Y} & \mathrm{Z} & \end{array}\right.$ | $\rightarrow$ | $\begin{array}{llll}  & & B & \\ & & & 4 \\ & & 4 & 5 \\ & \mathrm{X} & 2 & 3 \\ & & \mathrm{Y} & \mathrm{Z} \end{array}$ | $\rightarrow$ | $\begin{array}{rlrll} 1 & & B & & 5 \\ & A & 4 & 3 & \\ \times & 2 & & \mathrm{Y} & \mathrm{Z} \end{array}$ | $\rightarrow$ | $\begin{array}{llllllll}  & B & & & & \\ 1 & 4 & 3 & & 5 & \\ & \text { A } & \mathrm{Y} & \mathrm{Z} & & & \mathrm{X} \\ 2 & & & & & \end{array}$ | $\rightarrow$ |  |

