$$\begin{array}{c|c}
\mathbf{C}_1 & \xrightarrow{\int_1} & \mathbf{D}_1 \\
\hline
\mathbf{MonCat} & & \mathbf{D}_1 \\
\hline
\mathbf{MonCatMonCat} & & G \\
\mathbf{C}_2 & \xrightarrow{\mathbf{MonCat}} & & \mathbf{D}_2
\end{array}$$