Reduction case V $\quad z_{ij}=0$ and $f_j = 0$. $\quad [m_0^2 \neq 0]$

In this case primary Passarino-Veltman formula ① becomes.

$$n_k D_{\hat{k}00\,0\cdots0\,1\cdots1\,2\cdots2\,3\cdots3} = \frac{1}{2}\Big[\delta_{n_k 0}\, C_{0\cdots0\,\underbrace{1\cdots1}_{n_{1(k)}}\,\underbrace{2\cdots2}_{n_{2(k)}}}(\hat{D}_k) - C_{0\cdots0\,1\cdots1\,2\cdots2\,3\cdots3}(\hat{D}_0)\Big]$$

Put $n_k \to n_k+1$
$\quad\;\; r \to r-1$

Implies $n_k = -1$
$\Rightarrow$ vanishes.

$$(n_k+1)\, D_{\underbrace{0\cdots0}_{2r}\,\underbrace{1\cdots1}_{n_1}\,\underbrace{2\cdots2}_{n_2}\,\underbrace{3\cdots3}_{n_3}} = \frac{1}{2}\Big[\delta_{n_k+1,0}\, C_{0\cdots0\,1\cdots1\,2\cdots2} - C_{k\,\underbrace{0\cdots0}_{2(r-1)}\,1\cdots1\,2\cdots2\,3\cdots3}(\hat{D}_0)\Big]$$

$$D_{\underbrace{0\cdots0}_{2r}\,\underbrace{1\cdots1}_{n_1}\,\underbrace{2\cdots2}_{n_2}\,\underbrace{3\cdots3}_{n_3}} = \frac{-1}{2(n_k+1)}\, C_{k\,\underbrace{0\cdots0}_{2(r-1)}\,\underbrace{1\cdots1}_{n_1}\,\underbrace{2\cdots2}_{n_2}\,\underbrace{3\cdots3}_{n_3}}(\hat{D}_0) \qquad r \geq 1 \qquad [1]$$

take $k=1$ for simplicity.

In primary Passarino-Veltman formula ②,
solve for $m_0^2 D_{0\cdots0\,1\cdots1\,2\cdots2\,3\cdots3}$.

$$D_{\underbrace{0\cdots0}_{2r}\,\underbrace{1\cdots1}_{n_1}\,\underbrace{2\cdots2}_{n_2}\,\underbrace{3\cdots3}_{n_3}} = \frac{1}{m_0^2}\Big[\big(d+2(r+n_1+n_2+n_3)\big) D_{\underbrace{0\cdots0}_{2(r+1)}\,1\cdots1\,2\cdots2\,3\cdots3} - C_{0\cdots0\,1\cdots1\,2\cdots2\,3\cdots3}(\hat{D}_0)\Big]$$

Put $r=0$.

$$D_{\underbrace{1\cdots1}_{n_1}\,\underbrace{2\cdots2}_{n_2}\,\underbrace{3\cdots3}_{n_3}} = \frac{1}{m_0^2}\Big[\big(4+2(n_1+n_2+n_3)\big) D_{00\,\underbrace{1\cdots1}_{n_1}\,\underbrace{2\cdots2}_{n_2}\,\underbrace{3\cdots3}_{n_3}} - C_{\underbrace{1\cdots1}_{n_1}\,\underbrace{2\cdots2}_{n_2}\,\underbrace{3\cdots3}_{n_3}}(\hat{D}_0) - 2\epsilon\, D_{00\,\underbrace{1\cdots1}_{n_1}\,\underbrace{2\cdots2}_{n_2}\,\underbrace{3\cdots3}_{n_3}}\Big|_{\substack{\text{Div}\\ \text{UV}}}\Big] \qquad [2]$$