$$\operatorname{Tr}^{Z}_{V \otimes_{\mathbf{C}} X, V \otimes_{\mathbf{C}} Y}(\operatorname{Id}_{V} \otimes_{\mathbf{C}} f) = \operatorname{Id}_{V} \otimes_{\mathbf{C}} \operatorname{Tr}^{Z}_{X,Y}(f)$$