Now we glue this as indicated in Fig.

$$
\begin{aligned}
&T_{\mathfrak{J}_D}(v)\times_v\Big(\big(T_{\mathfrak{J}_B,\mathfrak{J}_C,\mathfrak{J}_D}(w,u,v)\times_w C^{(0,0;A^{-1}B)}_{\mathfrak{J}_B}(w)\big)\\
&\qquad\times_u\big(T_{\mathfrak{J}_B,\mathfrak{J}_C,\mathfrak{J}_D}(h,u,z)\times_h C^{(1,0;AB^{-1})}_{\mathfrak{J}_B}(h)\big)\Big)\\
&\sim\oint\frac{\mathrm{d}u}{4\pi i u}\frac{\Gamma_e\big((qp)^{\frac12}t^{-1}A^{\pm1}D^{\pm1}u^{\pm1}\big)\Gamma_e\big((qp)^{\frac12}t^{-1}B^{\pm1}C^{\pm1}u^{\pm1}\big)}{\Gamma\big(u^{\pm2}\big)}\\
&\qquad\times\Gamma_e\big((pq)^{\frac12}tB^{-1}C^{\pm1}u^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tAD^{\pm1}u^{\pm1}\big)\\
&\times\oint\frac{\mathrm{d}v}{4\pi i v}\frac{\Gamma_e\big((qp)^{\frac12}t^{-1}A^{\pm1}C^{\pm1}v^{\pm1}\big)\Gamma_e\big((qp)^{\frac12}t^{-1}B^{\pm1}D^{\pm1}v^{\pm1}\big)}{\Gamma(v^{\pm2})}\\
&\times\Gamma_e\big(A^{-1}Bu^{\pm1}v^{\pm1}\big)\Gamma_e\big((qp)^{\frac12}tB^{-1}D^{\pm1}v^{\pm1}\big)\Gamma_e\big((qp)^{\frac12}tAC^{\pm1}v^{\pm1}\big)T_{\mathfrak{J}_D}(v)\\
&\qquad\times T_{\mathfrak{J}_B,\mathfrak{J}_C,\mathfrak{J}_D}(h,u,z)\times_h C^{(1,0;AB^{-1})}_{\mathfrak{J}_B}(h).
\end{aligned}
$$

Let's perform the computation for each term in (**??**) separately. From the first term we get

$$
\begin{aligned}
&\frac{\theta_p\big(pq^2t^2A^{-2}B^2\big)\theta_p\big((pq)^{-1}q^{-1}t^{-4}A^2B^{-2}\big)}{\theta_p\big(t^{-2}\big)\theta_p\big(q^{-1}t^{-2}B^{-2}\big)\theta_p\big(q^{-1}t^{-2}A^2\big)\theta_p\big(pq^2t^4A^{-2}B^2\big)\theta_p\big(q^{-1}t^{-2}AB^{-1}C^{\pm1}D^{\pm1}\big)}\\
&\times\oint\frac{\mathrm{d}u}{4\pi i u}\frac{\Gamma_e\big((qp)^{\frac12}t^{-1}A^{\pm1}D^{\pm1}u^{\pm1}\big)\Gamma_e\big((qp)^{\frac12}t^{-1}B^{\pm1}C^{\pm1}u^{\pm1}\big)}{\Gamma\big(u^{\pm2}\big)}\\
&\qquad\times\Gamma_e\big((pq)^{\frac12}tB^{-1}C^{\pm1}u^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tAD^{\pm1}u^{\pm1}\big)\\
&\times\oint\frac{\mathrm{d}v}{4\pi i v}\frac{\Gamma_e\big((qp)^{\frac12}t^{-1}A^{\pm1}C^{\pm1}v^{\pm1}\big)\Gamma_e\big((qp)^{\frac12}t^{-1}B^{\pm1}D^{\pm1}v^{\pm1}\big)}{\Gamma\big(v^{\pm2}\big)}\\
&\times\Gamma_e\big(A^{-1}Bu^{\pm1}v^{\pm1}\big)\Gamma_e\big((qp)^{\frac12}tB^{-1}D^{\pm1}v^{\pm1}\big)\Gamma_e\big((qp)^{\frac12}tAC^{\pm1}v^{\pm1}\big)T_{\mathfrak{J}_D}(v)\\
&\qquad\times\frac{\theta_p\big((pq)^{\frac12}q^{-1}tB^{-1}z^{-1}D^{\pm1}\big)\theta_p((pq)^{\frac12}q^{-1}tAz^{-1}C^{\pm1})}{\theta_p\big(t^{-4}z^2\big)\theta\big(z^2\big)}\\
&\times\Gamma_e\big(q^{-\frac12}AB^{-1}u^{\pm1}\big(q^{\frac12}z\big)^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}q^{\frac12}tBD^{\pm1}\big(q^{\frac12}z\big)^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}q^{\frac12}tA^{-1}C^{\pm1}\big(q^{\frac12}z\big)^{\pm1}\big)\\
&\times\Gamma_e\big(t^{-4}AB^{-1}zu^{\pm1}\big)\Gamma_e\big(pq^2t^4A^{-1}Bz^{-1}u^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tA^{-1}u^{\pm1}D^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tBu^{\pm1}C^{\pm1}\big)\\
&\qquad+\big\{z\leftrightarrow z^{-1}\big\}.
\end{aligned}
$$

Terms cancel and the integral over u reduces to an integral over 6 gamma functions which can be evaluated as before using the elliptic beta integral