The Pure Braid Group

Generators and relation according to Drinfel'd GalQ/Q paper:

$$x_{ij} = (\sigma_{j-2} \cdots \sigma_i)^{-1} \sigma_{j-2}^2 (\sigma_{j-2} \cdots \sigma_i) = (\sigma_{j-1} \cdots \sigma_{i+1}) \sigma_i^2 (\sigma_{j-1} \cdots \sigma_{i+1})^{-1}, \quad (4.6)$$

and the defininig relations among the x_{ij} are of the form

$$(a_{ijk}, x_{ij}) = (a_{ijk}, x_{ik}) = (a_{ijk}, x_{jk}) = 1,$$

$$\text{where } i < j < k, \quad a_{ijk} = x_{ij} x_{ik} x_{jk}. \quad (4.7)$$

$$(x_{ij}, x_{kl}) = (x_{il}, x_{jk}) = 1 \quad \text{for } i < j < k < l, \quad (4.8)$$

$$(x_{ik}, x_{ij}^{-1} x_{jl} x_{ij}) = 1 \quad \text{for } i < j < k < l. \quad (4.9)$$