

Fig. S1. Cranium and atlas of *D. quadramaculatus* showing the stalked occipital condyles (arrow in A), and the trochlea formed by the parietal and occipito-otic bones (arrow in B) through which the atlanto-mandibular ligament runs. The ligament slides freely in the trochlea, which is also visible in caudal views (C, D).

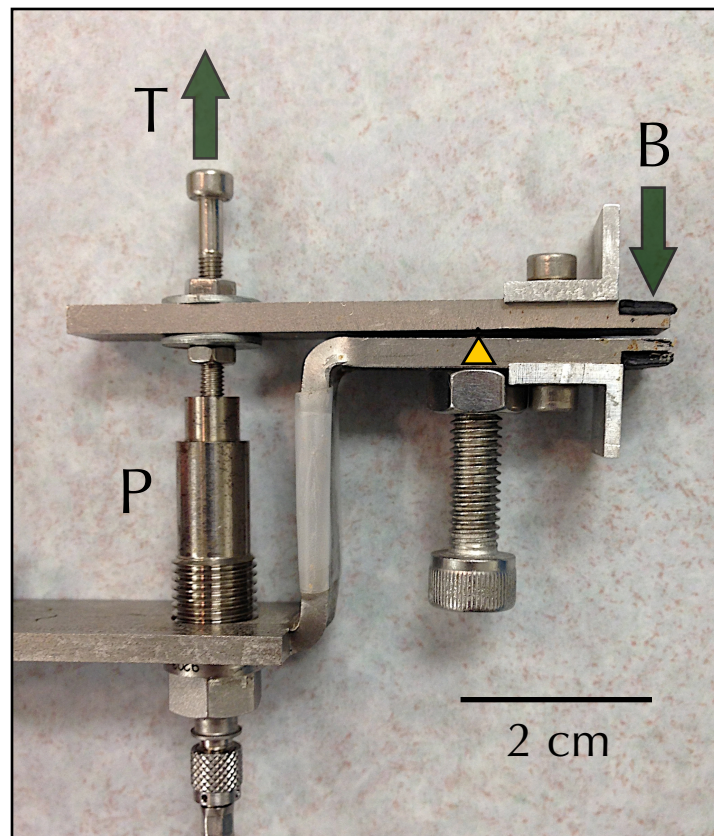


Fig. S2. Bite force transducer indicating the tension (T) applied to the piezo- electric transducer (P) via the fulcrum (triangle) when bite force (B) is applied to the bite plate.



Fig. S3. Adult *Desmognathus quadramaculatus* specimen in life. Note the relatively smooth dorsal surface of the cranium and the “neckless” appearance due to the enlarged quadratopectoralis muscles. These features and the enlarged hind limbs are characteristic of desmognathine salamanders. Head width is approximately 14 mm.

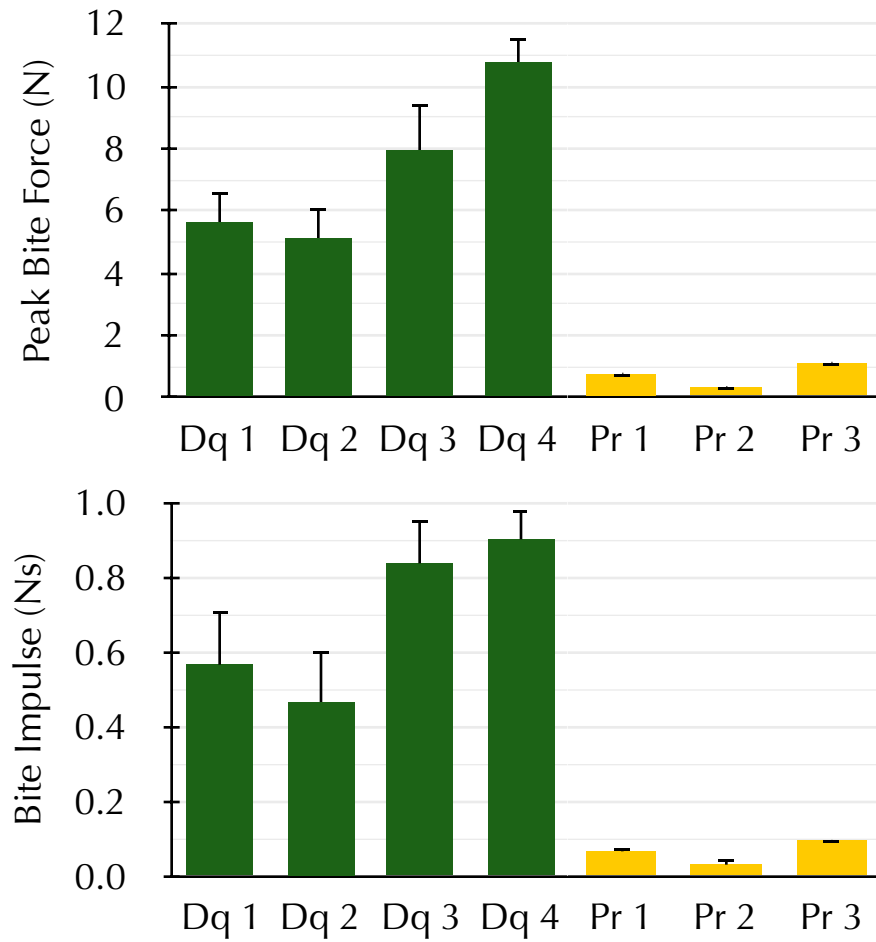


Fig. S4. Mean and SEM of peak bite force and bite impulse from *D. quadramaculatus* (green; n=6, 2, 4, 9) and *P. ruber* (gold; n=5, 3, 1).



Movie 1. *Desmognathus quadramaculatus* rapidly biting the bite transducer baited with a cricket exoskeleton.



Movie 2. Fluoroscope images of *Desmognathus quadramaculatus* capturing a cricket with tongue projection, followed by biting and prey transport as well as the characteristic desmognathine head-flexion behavior. Note the mobility of the atlanto-occipital joint between the enlarged atlas and the cranium during head flexion (upper panel) and the stalked occipital condyles (lower panel).

Workbook 1. Microsoft Excel Workbook with formulae and description of the geometric methods used to calculate muscle moments.

[Click here to Download Workbook 1](#)