It is important to consider the thigh-calf contact force to analyze the kinetics of a lower limb during deep knee flexion, however, the measured forces have varied very much and difficult to understand systematically. In this study, we considered that the thigh-calf contact force might be estimated by considering not only the individual difference but also the joint angles or the posture of an upper body, and measured the forces and introduced the estimating equation. As a result, the maximum error of estimation was 0.43BW.