Theorem 2.14:

Ass.: 1) Standard assumptions $(3)^*$ with modifications:

$(3)^*_{1)}$ $f \in X^*$, $g \in \Lambda_c^*$

$(3)_{2)}$ $a(\cdot,\cdot), b(\cdot,\cdot)$ $\dagger$: α_2, β_2

$(3)_{3)}$ LBB - condition : β_1

$(3)^*_{4)}$ $a(\cdot,\cdot)$ is elliptic on X, i.e.

$a(v,v) \geq \bar{\alpha}_1 \|v\|_X^2 \quad \forall v \in X.$

2) Λ_c and $c(\cdot,\cdot) : \Lambda_c \times \Lambda_c \to \mathbb{R}$ fulfil Assumptions (33).

St.: Then (37) - (38) defines an isomorphism $L : X \times \Lambda_c \longmapsto X^* \times \Lambda_c^*$ ($\Rightarrow \exists !$) and $L^{-1} : X^* \times \Lambda_c^* \longmapsto X \times \Lambda_c$ is uniformly bounded for $t \in [0,1]$.

Proof: see [Numerische Festkörpermechanik] Satz 2.12

or

[Braess] pp. 132 - 137.