Inference at $*$ 1 0
of proof for Lemma linorder_functionality_wrt_iff:

1. T : Type
2. R : $T \to T \to \mathbb{P}$
3. R' : $T \to T \to \mathbb{P}$
4. $\forall x,\ y{:}T.\ R(x,y) \iff R'(x,y)$

$\vdash$ (Order(T;x,y.$R(x,y)$) & Connex(T;x,y.$R(x,y)$))
$\iff$ (Order(T;x,y.$R'(x,y)$) & Connex(T;x,y.$R'(x,y)$))
by PERMUTE{1:n,
2:n,
2:n,
2:n,
3:n,
4:n,
5:n,
6:n,
7:n,
8:n,
9:n,
10:n,
11:n,
12:n,
7:n,
7:n,
8:n,
9:n,
10:n,
11:n,
12:n,
7:n,
13:n,
14:n}

1: . . . . .wf. . . . . NILNIL

$\vdash$ (Order(T;x,y.$R(x,y)$) & Connex(T;x,y.$R(x,y)$)) $\in \mathbb{P}$
2: . . . . .wf. . . . . NILNIL

$\vdash$ (Order(T;x,y.$R'(x,y)$) & Connex(T;x,y.$R'(x,y)$)) $\in \mathbb{P}$
3: . . . . .wf. . . . . NILNIL

$\vdash$ Order(T;x,y.$R(x,y)$) $\in \mathbb{P}$
4: . . . . .wf. . . . . NILNIL

$\vdash$ Order(T;x,y.$R'(x,y)$) $\in \mathbb{P}$
5: . . . . .wf. . . . . NILNIL

$\vdash$ Connex(T;x,y.$R(x,y)$) $\in \mathbb{P}$
6: . . . . .wf. . . . . NILNIL

$\vdash$ Connex(T;x,y.$R'(x,y)$) $\in \mathbb{P}$
7: . . . . .wf. . . . . NILNIL

$\vdash$ $T \in$ Type
8: . . . . .wf. . . . . NILNIL

$\vdash$ $(\lambda x,y.\ R(x,y)) \in T \to T \to \mathbb{P}$
9: . . . . .wf. . . . . NILNIL

$\vdash$ $(\lambda x,y.\ R'(x,y)) \in T \to T \to \mathbb{P}$
10: . . . . .wf. . . . . NILNIL

5. $x : T$
6. T
$\vdash$ $x \in T$
11: . . . . .wf. . . . . NILNIL

5. T
6. $y : T$
$\vdash$ $y \in T$
12: . . . . .wf. . . . . NILNIL

5. T
$\vdash$ $T \in$ Type
13: . . . . .wf. . . . . NILNIL

$\vdash$ (Order(T;x,y.$R'(x,y)$) & Connex(T;x,y.$R'(x,y)$))
=
(Order(T;x,y.$R'(x,y)$) & Connex(T;x,y.$R'(x,y)$))
14:

$\vdash$ (Order(T;x,y.$R'(x,y)$) & Connex(T;x,y.$R'(x,y)$))
$\iff$ (Order(T;x,y.$R'(x,y)$) & Connex(T;x,y.$R'(x,y)$))
.

---

http://www.nuprl.org/FDLcontent/p0_942988_/p121_80040_{linorder_functionality_wrt_iff}1_0.html