```
lquo_rel_tran  THM

⊢  ∀R:(A*→A*→Prop).
|  (EquivRel x,y:A*. x R y) ⇒
|  (∀x,y,z:A*. (x R y) ⇒ ((z @ x) R (z @ y))) ⇒
|  (∀g:((x,y:A*//(x R y))→𝔹). Trans u,v:x,y:A*//(x R y). u Rg v)
| by UnivCD THEN (Unfold `lquo_rel` 0)
|
1. A : Type
2. R : A*→A*→Prop
3. EquivRel x,y:A*. x R y
4. ∀x,y,z:A*. (x R y) ⇒ ((z @ x) R (z @ y))
5. g : (x,y:A*//(x R y))→𝔹
⊢  Trans u,v:x,y:A*//(x R y). u (λx,y. ∀z:A*. g(z@_q x) ⟺ g(z@_q y)) v
| by (Unfold `trans` 0) THEN (Reduce 0)
|
⊢  ∀a,b,c:x,y:A*//(x R y).
|  (∀z:A*. g(z@_q a) ⟺ g(z@_q b)) ⇒
|  (∀z:A*. g(z@_q b) ⟺ g(z@_q c)) ⇒ (∀z:A*. g(z@_q a) ⟺ g(z@_q c))
| by Auto
|
|\
| 6. a : x,y:A*//(x R y)
| 7. b : x,y:A*//(x R y)
| 8. c : x,y:A*//(x R y)
| 9. ∀z:A*. g(z@_q a) ⟺ g(z@_q b)
| 10. ∀z:A*. g(z@_q b) ⟺ g(z@_q c)
| 11. z : A*
| 12. g(z@_q a)
| ⊢  g(z@_q c)  by RWW "9 10" 12
|
.\
. 6. a : x,y:A*//(x R y)
. 7. b : x,y:A*//(x R y)
. 8. c : x,y:A*//(x R y)
. 9. ∀z:A*. g(z@_q a) ⟺ g(z@_q b)
. 10. ∀z:A*. g(z@_q b) ⟺ g(z@_q c)
. 11. z : A*
. 12. g(z@_q c)
. ⊢  g(z@_q a)  by RWW "9< 10<" 12
END
```