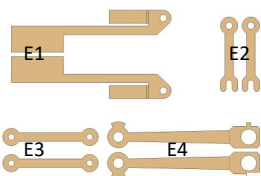


PERCY CHASSIS - Valve-Gear Upgrade Kit

This upgrade kit includes 3D-Printed resin components. Keep these parts out of direct sunlight. Detailing and structural supports remain in order to protect the parts in transit, and should be removed before painting. If modifying the parts in any way (either by cutting, filing, sanding or drilling) be sure to wear appropriate protective clothing such as gloves and masks. We recommend painting all components before assembly.

COMPONENT CHECKLIST

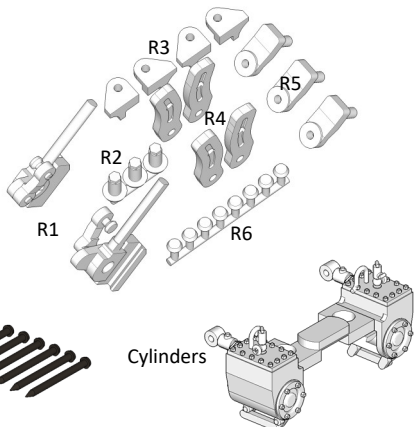


Etch Parts

- E1 Slidebars
- E2 Combination Levers
- E3 Eccentric Rods
- E4 Connecting Rods

Resin Motion Parts

- R1 Crossheads
- R2 Crosshead Pins
- R3 Pivot Washers
- R4 Expansion Links
- R5 Eccentric Cranks
- R6 Valve Gear Pins

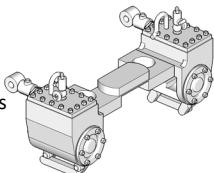


Additional Parts

8x PECO Track Pins

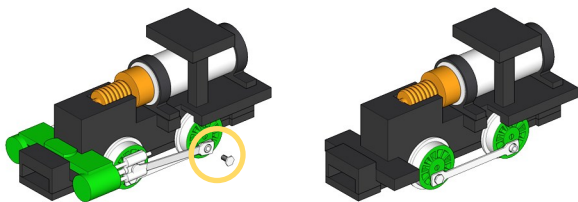


Cylinders



STEP 1

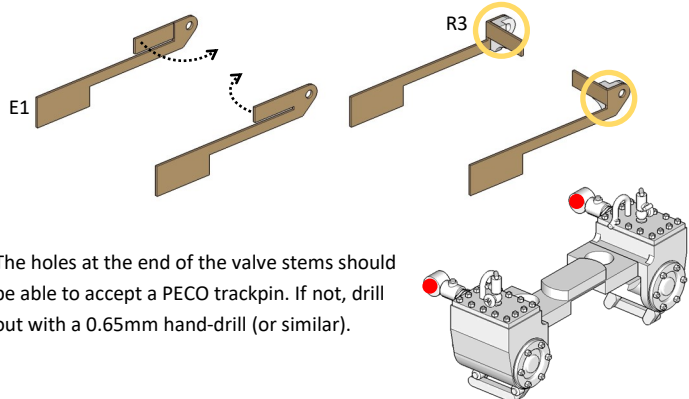
Remove the Percy bodyshell via the 4 corner screws (2 between the cylinders, and 1 behind each rear wheel). Then remove the rear wheel nuts to free up the connecting rod.



Remove the connecting rod, piston and cylinders from the chassis, and put to one side ready for the valve gear. At this point, you may wish to paint the wheel centres and coupling rods.

STEP 2 - Prepare the slidebars and Cylinders

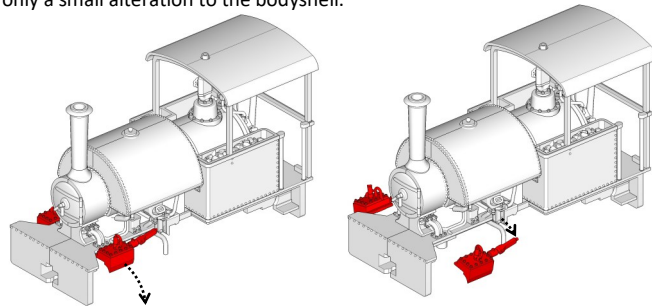
Using a pair of tweezers (or similar) to keep the main slidebar straight, bend the spacer arm ninety-degrees to the slidebar. Glue the pivot washer (R3) on the inside of the fold so that the hole lines up with the hole in the slidebar. (These are handed, and the profile should match the slidebar on each side.)



The holes at the end of the valve stems should be able to accept a PECO trackpin. If not, drill out with a 0.65mm hand-drill (or similar).

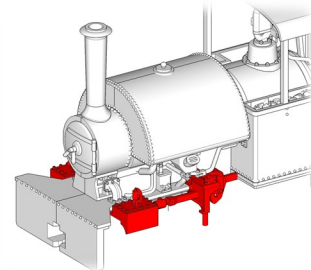
BODY PREPARATION

This chassis upgrade kit is designed to fit the 2025-released version of the Bagnall-inspired models 'Nixie', 'Dot', 'Jerry' and 'Frank'. If the kit includes a static chassis which has a representation of valve-gear, then this requires only a small alteration to the bodyshell.



There is a score line underneath the valve-chest. Bend these downwards to snap them off the main frame. The end of the radius rod should also twist off the lifting arms. The body is then ready to fit the upgraded chassis.

If you have a pre-2025 release of this kit (i.e. the static chassis does not include valve gear), this requires the valve-chest to be cut off with appropriate modelling tools, as well as the entire frame from the bunker to the forward side of the motion bracket. All parts shown in red here →



Keep up to date with the latest news on upcoming models from Fourdees Ltd at our website:

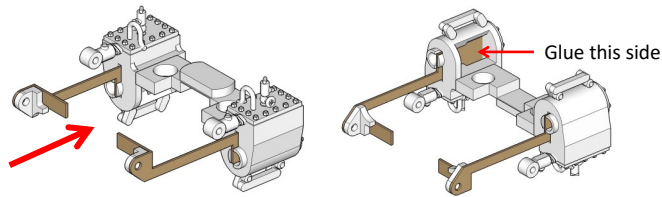
www.fourdees.co.uk

info@fourdees.co.uk

57 Wentworth Road, Blacker Hill, Barnsley, S74 0RP

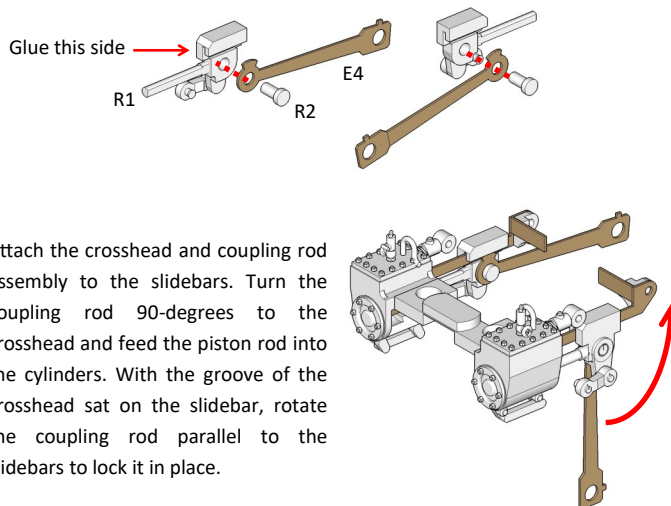
STEP 3

Slot the sidebar assemblies into the cylinder blocks, one side at a time. Secure the slidebars with glue on the rear of the blade (the opposite side to the connecting rod), checking that they remain parallel to the cylinders.



STEP 4

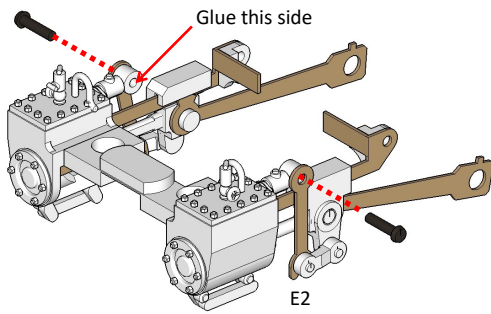
Slot the connection rods (E4) over the crosshead (R1), and push a connecting rod pin (R2) through the back of the connecting rod and crosshead. Secure the pin with glue on the outside of the crosshead. Wait to set, and check that the connecting rod still pivots freely.



Attach the crosshead and coupling rod assembly to the slidebars. Turn the coupling rod 90-degrees to the crosshead and feed the piston rod into the cylinders. With the groove of the crosshead sat on the slidebar, rotate the coupling rod parallel to the slidebars to lock it in place.

STEP 5

Attach the combination lever to the cylinder/slidebar/crosshead assembly. Cut down two of the PECO trackpins to 3mm length. One side at a time, place the 'Y' end of the combination lever (E2) over the pin on the crosshead, and line up the 'hole' end with the one on the cylinders. Thread the trackpin through the eccentric rod and pivot hole, and secure with glue at the rear.

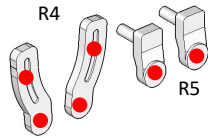


The crosshead/connecting rods will be loose until fitted to the chassis, so you may find it easier to fit the combination levers after STEP 9.

STEP 6 - Prepare the motion and check fittings.

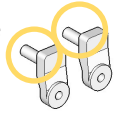
Pivot Holes

The pivot holes in the expansion link and eccentric crank should accept the valve gear pins (R6*). If not, drill out with a 0.65mm hand-drill (or similar).



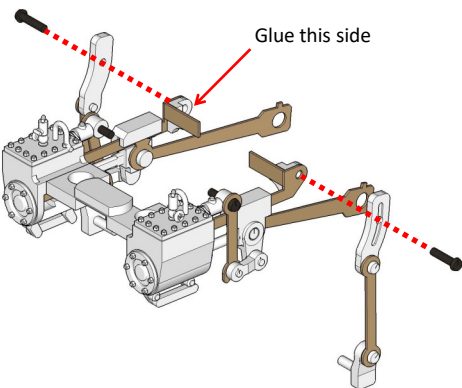
Pivot Pins

The pin on the rear of the eccentric crank should slot into the hole in the rear wheel of the Percy chassis. If not, use wet-and-dry paper, a file, or a knife to trim the thickness of the pin.

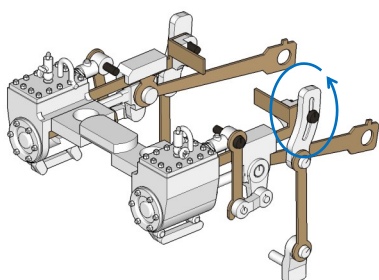


STEP 8

Attach the valve gear assembly to the rest of the motion parts. Cut-down two more PECO trackpins to 3mm length, and insert them through the central hole of the expansion link, then through the hole in the slidebar and washer.

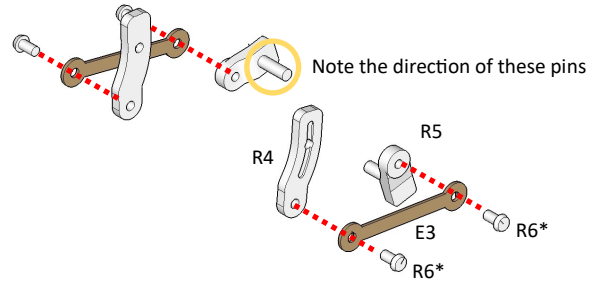


Secure with glue on the rear, and once set, check the expansion link still pivots freely.



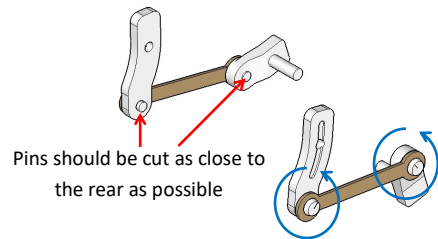
STEP 7

Assemble the valve gear linkages. Thread two motion pins (R6*) through the holes on the end of the eccentric rods. Then fit the eccentric crank and expansion link to either end, making sure that the groove on the expansion link and the circular face of the eccentric crank face the eccentric rod.



Trim any excess pin away to the rear so that it is flush as possible, and then glue the pins against the back of the crank and link. Leave for the adhesive to set, then check that the parts still pivot freely.

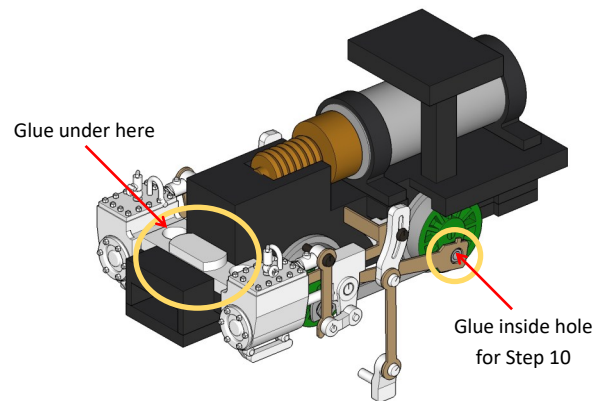
We have sometimes found that the easiest way to carry out this process is to position the pins 'pin-up' and to then slot the hole of the eccentric rod over the pin. Then fit the eccentric crank and expansion links one at a time.



**If you find these motion pins fiddly, you can use two cut-down PECO trackpins (trimming after assembly). But make sure these do not protrude too much at the rear as they may catch other parts of the motion.*

STEP 9

Glue the cylinders and motion assembly to the chassis using adhesive underneath the bridge between the two cylinders. Line up the hole in the big end of the



connecting rod with the boss on the rear wheel.

