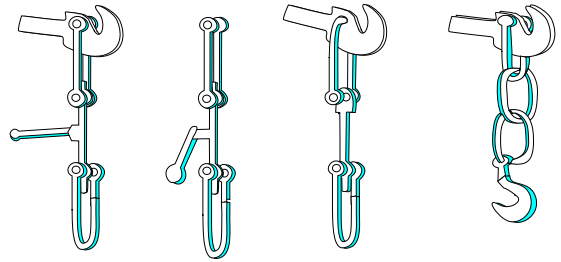


Couplings

Introduction

There is no such thing as a standard coupling. Any vehicle manufacturer is likely to have changed its design more than once and there were tens of different manufacturers.

There are some accepted design criteria, such as those adopted by the Railway Clearing House in 1907 or 1923. Later British Railways effectively standardised on design features in the 1950's and then later the UIC coupling standard was adopted to allow the interchangeability of stock across Europe.



- AMBIS Engineering supplies the following coupling etches
- Pre-Grouping hooks on CH3
- RCH pattern hooks on CH1
- BR era (1950's) hooks on CH2
- UIC/ BR Screw coupling hooks on etch CH4
- Steam era screw link hooks on etch CH5
- LMS hooks 6 with relieved sides CH6

There are a number of basic dimensions that generally apply, but then these have exceptions depending upon local circumstances.

As a safety issue any coupling must not drop closer than 6 inches to the rail level. Given the height of draw-bars/buffer centre height this means a loose coupling should not be little more than 3 feet long. From this length it means buffers should normally be 18 inches long, otherwise coupling/uncoupling cannot be achieved, but this allows stock to be buffeted about. The "instanter" coupling link was introduced to reduce this buffetting by shortening the centre coupling link, but allow speedy coupling/uncoupling by a shunter to be maintained.

The screw link coupling replaced the loose link coupling to provide a continuous draw-bar weight and provide for automatic braking to be introduced and became universal for all passenger carrying stock where autocouplers are not used. A screwed rod replaces the centre loose link allowing a "rigid" coupling between stock. However to enable uncoupling it has to be longer than loose links and therefore needs to be "stowed" when not in use.

You should examine evidence about a type of vehicle, if the exact vehicle cannot be traced, as there were more noticeable styles introduced for screw couplings than loose link couplings. For example the GWR used a hook beneath the buffer beam which was possible because the top link to the coupling was made as an inverted U shape. Other manufacturers shackled a link either side of the draw-hook, limiting the link's sideways movement resulting in the coupling being "tied up" or being hooked over the draw-hook.

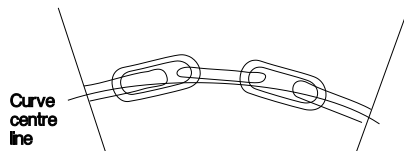
In general stock with screw couplings would be fitted with buffers at least 20.5" long., so should a wagon be maintained and then outshopped with "instanter" or three link couplings the draw-hook would need to be extended away from the headstocks to compensate - see photographs of BR era wagons. Alternatively the buffers may have been replaced by the first available items resulting in the same necessity.

To enable some stock - such as bogie bolster wagons to enter factory yards where there were very tight curves - some working appendices were annotated such that a loose long coupling would be required to enable long wagons to be shunted. Some anecdotes record the use of a wagon's standard coupling and a resulting derailment.

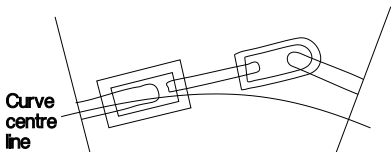
In a model context the length of the coupling needs to be considered where long vehicles, long buffers and tight curves exist. One of the first steps to mitigate problems would be to spring or compensate buffers, the next to ban the use of long vehicles where the curves are tightest or more drastically re-design the layout to remove the tight curves.

There are several different approaches to providing a shortenable coupling link. One uses a twin screw helix, another a single screw and bushed connection. There are different pattern tommy bars for providing leverage to tighten/loose the screw as well. Wagon stock generally is fitted with a lighter-weight coupling than a locomotive.

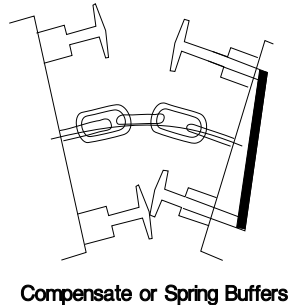
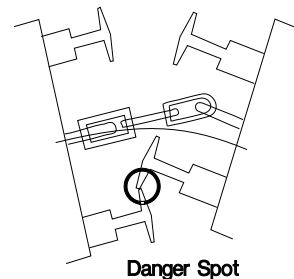
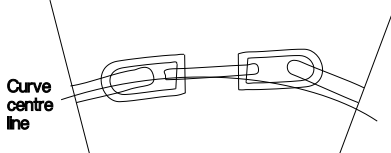
A few classes of locomotives have been observed with different couplings. The BR standard 9F and the Bullied Pacifics are two, where a short "U" link through the draw hook followed by a short "U" link connected to the screw link was used - in effect a four part coupling. This may be to overcome the long overhang of the front buffer beam and give some flexibility when negotiation of tighter curves for a shackled coupling.



Unless the links are generously wide the centre link provides most flexibility going around curves



A screw link with two piece top link does not provide any flexibility, but the coach type also used by GWR, LNER does



Screw couplings - CC3

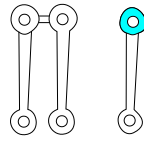
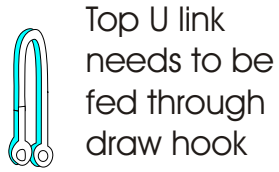
Assembling screw couplings

The AMBIS Engineering coupling etch CC3 has a number of components to provide a variety of coupling link styles.

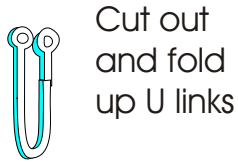
- Make sure the holes needed are exist and will allow your lin/wire to pass through. These etches are on the edges of production capabilities. Where a hole is not clear probably a .001" layer of metal has been left, use a pin to pierce this. Use a cutting broach to open/smooth the holes.
 - Use of dressmakers pins, or commonly available wire (not supplied) will be necessary to assemble these couplings.
 - Select the style of coupling required.
 - The centre screw section needs to be folded up and the top and bottom bosses strengthened by further fold over layers.
 - If using a top "U" link then an oval hole is needed in the draw hook. AMBIS supplies such hooks on the CH5 etching.
 - Remove any square edges from the coupling parts with gentle filing.
 - Do not make the centre links too inflexible as this can result in unwanted uncoupling if there is any jerking in the movement of a moving train or during reversing movements.
 - Although parts can be glued together we would normally recommend soldering component layer together.
 - The bottom etch link may be substituted by a soft iron wire loop if the user desires to enable "magnetic uncoupling"
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- A product from AMBIS Engineering - see www.ambisengineering.co.uk
 - e-mail questions to ajaustin27@gmail.com

Mail order or exhibition sales

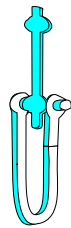
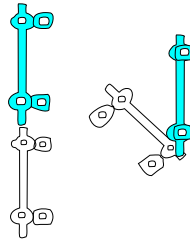
- 80 Westgate Street, Shouldham,
Kings Lynn PE33 0BH
Norfolk



Cut out Shackle links - fold up if necessary



Cut out centre link, fold over and fold over boss extenders



Use Pins or wire to join sections together

