



D and U Locks

A D/U lock comprises a D or U shaped steel shackle that locks into a “lock body”. The lock body contains the locking mechanism. The shackles vary in length and width depending on the intended use. Those intended to be used to secure frames and wheel(s) to parking furniture are larger providing a wider and longer locking ‘span’, others are solely intended for use as a secondary lock to secure a wheel to a bike frame and are smaller as necessary.

Typically shackles are made from hardened steel. Steel alloys containing Boron or Chromium-Molybdenum are also used to increase strength and reduce weight. Lock bodies are typically made from folded sheet steel or toughened plastic.

It is important to understand that biggest is not always best. For optimum security the size of the lock needs to be appropriate for the parking furniture and frame/wheel(s) it is intended to secure. When secured to the bike and parking furniture the D/U lock needs to fit so as to minimise any unfilled space between the cuff and the object it secures so as to limit the opportunity for insertion of tools to lever the lock apart.

Locking mechanisms include barrel and key, and pin and key. The older barrel locks with cylindrical keys are vulnerable to picking and should be avoided [could link to bic pen lock picking video].

D/U locks can be carried on the bike using a frame mount.

D/U locks are vulnerable to ‘levering’.

Weight:

Average weight is 1.28kg.

Dimension:

Internal width from 82-127mm. Most common is 105-109mm.

Internal length from 178-292mm. Most common is 230mm.

Shackle diameter from 12-19mm.

Usability:

Specification of internal width and length is important and should consider the items that the lock is required to secure. Locking mechanisms are often open to the elements and can become stiff. Weight is an issue as the most secure D/U locks are also the heaviest.

Keys and Barrel:

Locking mechanisms include barrel and key, pin and key.

Bikeoff Performance Rating:

The table below gives a ‘user value’ out of thirty, in green, and a ‘security

value' out of thirty, in red. The total value, out of sixty, gives the overall Bikeoff Performance Rating (BPR). If the Bikeoff Performance rating is in green then the lock is 'user biased', a red rating denotes 'security bias' and a yellow rating indicates an equal performance in relation to user and abuser considerations meaning the lock is a 'good all rounder'. Lock performance is also considered in relation to length of stay to indicate how increased risk (more time parked unattended) impacts on user and abuser values, e.g. lighter, and less secure locks will have a much lower BPR for long stops than for quick stops.

Length of stay	Quick	Short	Medium	Long
Weight	5.14	5.1	5.4	5.4
Ease of use	6.4	6.4	6.4	6.4
Storage	7.3	7.3	7	6.95
	18.84	18.8	18.8	18.75
Resistance	20.1	18.3	16.5	15.42
BPR	38.94	37.1	35.3	34.17

The above values show that D/U locks are a good 'all round' locking solution. Their user centred value being similar to their abuser centred value for most stay lengths. D/U locks are particularly effective for shorter stay lengths as they combine a high level of security with being easy to carry and apply.

Useful References:

www.WeblinkInFull.com