

Chapter Fourteen:

WHAT MOVES THE PHYSICAL GATE / BARRIER

OPERATORS Operators are the parts or part of the system that move the physical gate or barrier. They are controlled by the main control panel that acts as the heart of the system, usually interfacing with most if not all of the equipment and controls for the system.

Most commonly they are either Electro hydraulic or Electro mechanical operators and they can lock (non-reversible) or be non-locking (reversible) throughout.

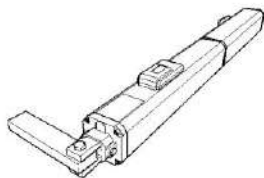
Some operators can be both (locking/non-reversible & non-locking/reversible) and some can be locking on opening and non-locking on closing, or vice versa. Each has its own pros and cons according to system design and customer requirement regarding failure status.

With operator locking, any force or abuse is normally taken by the operator itself and excessive force damages the unit accordingly. Therefore, locking units are more commonly used in domestic installations as they minimize the need for additional or supplementary locking that would otherwise be required for security.

There are numerous types and models of operator on the market today and choosing the right one is important. Size and shape of the gate, level of use, degree of opening, failure status required, all contribute to the operator that is best recommended. All operators should move the gate under an adjustable load setting that is required to be set as safely as possible and yet functional under reasonable conditions of use. These conditions vary and are most obvious during weather extremes, just when the system is most needed!

Common types include;

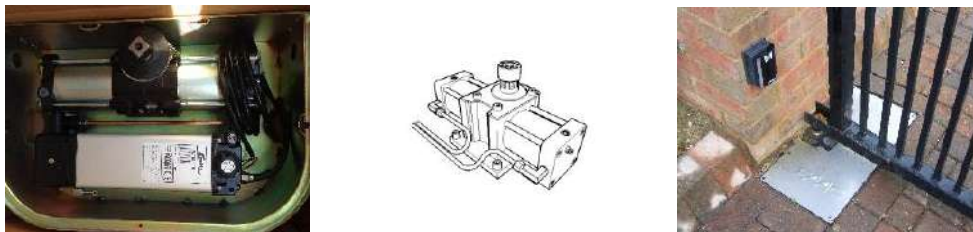
'Rams' usually fitted above ground, onto the gate and support structure.



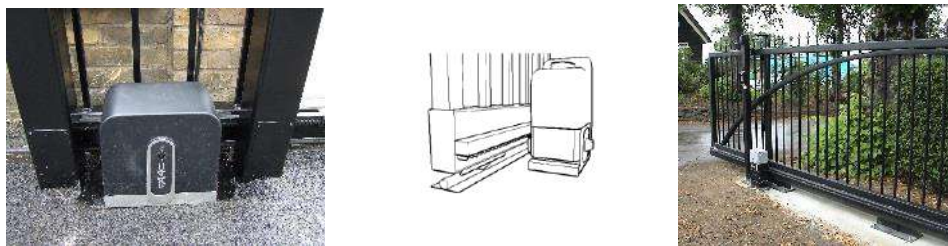
***'Link Arms'** usually fitted above ground, onto the support structure and gate leaf also leaf to leaf or beam to leaf.*



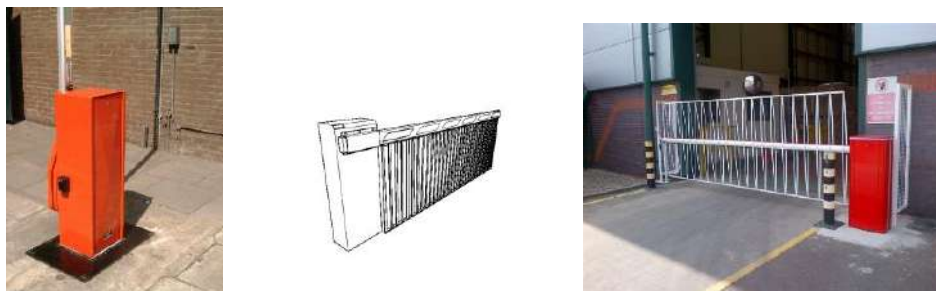
***'Under-gate'** usually fitted below ground and controls the pivot point of each gate leaf.*



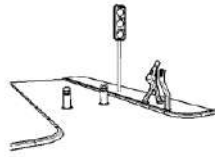
***'Sliding'** usually ground mounted, controlling the lower section of the gate.*



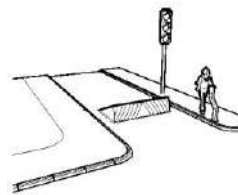
***'Barrier'** usually stands alone, controlling the beam that is often free standing.*



'Bollard/Blocker' built into the physical element as well as half and half (remote pump, etc.)



Blockers



Some operators are able to provide damping or slow-down at certain points of operation and can be ideal with systems that require this facility (noise reduction, safety, large/heavy/fragile gates etc.)

Operators should not have to provide additional load to accommodate gravity or unnecessary resistance such as poor hinges, obstructive clearances, ground levels, foliage etc. They should simply replace the need to use manual effort in a normal way, without excessive strain. A gate or barrier that is restrictive in manual operation is not usually suitable for automation without modification or adjustment.

Operator choice should be the most suitable long-term solution for the site and job in question (maximum reliability and serviceable life expectancy). Alternatives are numerous each benefit as well as disadvantages should be made clear to the owner.

The most popular 1st choice of operator, is an under-gate unit that fits out-of-sight. This option is often more costly and is less technically beneficial than the second most popular option which is that of a visible ram or even a link arm type unit.

Many people prefer the under-gate unit (jack type operator) for cosmetic reasons. Also there is a technical benefit with additional openings up to 180 degrees, or outward swing.

Above or Below Under-gate Jack operators usually control the gate by directly moving the pivot point of each leaf. This makes the unit ideal cosmetically and allows leaf swing beyond 100 degrees when required. However controlling the pivot point of the gate, is like opening a door by twisting the hinge, and therefore is vulnerable to damage due to the loads needed at that small point.



This is highlighted with snap, as the gate changes direction during powered use. Under-gate operators are only recommended suitable for 'Domestic' systems in a low risk of abuse environment. Another major consideration is that of water immersion/ingress and warranty avoidance. If the water table is high or the drainage of a unit foundation box becomes inadequate, water ingress and unit failure is increased.



Ram or link arm units are usually simpler to install and maintain, they are visible to otherwise ignorant abuse and as they fix part-way along each gate leaf, they have an obvious and sometimes major, mechanical advantage. Rams are more suitable on Multi-user & commercial systems. Manual release is above ground, making it more reliable and user friendly in operation.

